ITEMS OF INTEREST.

VOL. XVIII. FEBRUARY, 1896. No. 2.

ORIGINAL COMMUNICATIONS.

COCAIN.

Dr. F. S. Brooks, Martinez, Cal.

In looking over the ITEMS OF INTEREST for December, I was interested in the article on "Cocain," by Dr. N. S. Hoff, and am prompted to give my experience with this most valuable anesthetic, where properly understood and used. While agreeing in the main with the Doctor, I think he is slightly in error in stating that cocain should never be used in stronger than two per cent solution, unless he has reference to the pure article, uncombined with other drugs, which I do not consider safe, even in two per cent solution, for indiscriminate use hypodermically. I have had a number of disagreeable experiences with it: One, which is a sample of a number, I had while using the pure cocain in two per cent solution.

The patient was a strong healthy man of thirty-five years of age, had formerly traveled with a circus, giving exhibitions of his strength of jaw and teeth. I injected into the gums of a tooth he wished extracted about five minims of the solution of cocain. He immediately became very pale and nervous, then perfectly limp and unconscious, the perspiration fairly pouring from his body, the heart almost ceased action, and respiration became difficult. He was immediately placed in a horizontal position and allowed to inhale alternately for a few moments nitrite of amyl and ammonia, which had the desired effect. I was able to proceed with the extraction in a half hour. I know of no way by which you can foresee these evil results. They seem to occur as frequently with the strong as with the weak.

I have used solutions of the pure article in strength varying from 1 to 5 per cent many times with no bad effects, and usually as good results from 1 per cent as from 5, except where there was some inflammation. But the exceptions to this rule are too

numerous. I therefore use the following formula which I saw in the ITEMS :

℞. Atropin sulf..... gr. ss.
Strophanthin..... gr. $\frac{1}{5}$.
Carbolic acid..... gr. v.
Cocain mur..... gr. xx.
Water..... q. s. ℥j. M.

which, as will be seen, is a 4 per cent solution of cocain. I have used this in several hundred cases with no bad effects. Some time ago I reduced the quantity of cocain to 15 grains, thus making a 3 per cent solution. I also add 5 to 10 drops of glycerin. The results are very satisfactory. The advantage this formula possesses over that of Dr. Hoff's, is that it is always ready for use, as it will keep indefinitely. I have kept it good over six months. I have on more than one occasion extracted as many as seven teeth at one sitting. My method, where I have a number of teeth to extract, is to inject the solution into the gums on both sides of one tooth, then extract it and proceed with the others in the same way. In this way you avoid getting so much of the drug into the system as when you inject around all the teeth before extracting, and it is not necessary to wait, as some say, ten or fifteen minutes to get the full effect; it acts immediately. I have used it on all classes and conditions of people, neurotics, consumptives and people with very weak hearts, and so far have had no trouble. It acts like magic in extirpating live pulps.

DENTAL EXAMINING BOARDS AND PRELIMINARY EDUCATION.

Dr. G. Carleton Brown, Elizabeth, N. J.

Read before the Central Dental Association of Northern New Jersey.

A résumé of the question in regard to the influence of Examining Boards on dental education would necessarily become a history of the advance of modern dentistry, and in saying this, and in claiming a large share of this advance for the Examining Boards, I do not mean to detract from the great work that has been done by the colleges. To them, first and foremost, belongs the credit for the advanced standing of the profession of dentistry to-day. But I greatly doubt whether the colleges would have attained to their present standing, or have demanded the high standing now required of graduates, if it had not been for the Examining Boards.

The elevation of the standard of dentistry demanded by the profession must be done to a great extent through educational mediums, and as public institutions they are certainly open to criticism if they fail to properly equip their graduates.

An unprejudiced observer must admit that the boards have had an influence on the colleges, and, in many instances, have been the means of procuring for the student a higher and better education.

A few years ago it seemed the fashion for a man, when he thought he could not make a success of anything else, to enter the ministry or take up dentistry as a profession. The mere fact that he had not the preliminary education did not enter into the question.

The colleges recognized this by theoretically requiring a preliminary education. I say theoretically, for what they actually require hardly deserves even the name of education.

The examination, if it exists at all in some schools, must be a farce. I know that I shall be borne out by members of any Examining Board who require a written examination. I will give a few illustrations to demonstrate this point. These illustrations are taken from the papers of recent graduates, and are exactly as written; none being selected unless plainly written, so that no mistake could be attributed to defective penmanship:

Q. What relation to dental caries do the microörganisms bear?

A. Dental caries is a destruction of the tooth substance which is hard and microörganisms and effect the soft parts of a body.

Q. What acid is produced by the microörganisms?

A. Toxic acid is produced by the microörganisms.

Q. How?

A. By the action of them on the soft tissues, these be open.

Q. What is plethora?

A. It is a disease of the pleura.

Q. What is disease?

A. Is the disturbance of the equlebrum or preversion of circulation.

Q. What is fever?

A. The riseing of the tempeture caused by too much blood in a part.

Q. What is shock?

A. Shock is the suddent checking of the nerves caused by accident.

Q. What is the difference between a narcotic and a hypnotic?

A. Narcotic acts on part the small intestines. Hypnotic acts on the whole large intestines.

Q. What are the stages of anesthesia?

A. drowsiness sleepy feelings long breathing stifness of muscles and relaxation of the parts.

Q. What are the effects of inhaling nitrite of amyl?

A. It produces krowness.

But of what avail is a scientific education "if the student hasn't it in his fingers?" as Dr. Eaton has so tersely expressed it. He will never make a dentist. Of this fact the colleges have as yet taken no notice. They might perhaps refuse to graduate him at the end of his three years' course, even if he stands first in his class in theory; but would they do this? And if they did, would it not be pretty hard on the student? But is it not worse to have an incompetent man turned loose on the public? And here is where the Examining Boards come in again. As our friend and fellow-hornet, Prof. Flagg, says, "the board steps in and says 'hold!' and the young man steps out into 'innocuous desuetude' with three of the best years of his life wasted."

This is certainly hard on all concerned, the board, the college and the student. But, hard as it may be, the boards must do their duty as State officials and servants of the public. There is no question about its being hard on the student; the college from which he graduated should feel a twinge of remorse for having taken his time and money and failed to give him what he has paid for; they (the colleges), may have done all in their power, but if the student did not "have it in his fingers," to start with, all the colleges in the country could not have given it to him; their mission being only to develop. Where is the remedy? The first practicable suggestion that I have seen comes from Dr. Crouse, who says: "A young man may be bright, a good student, and well grounded in the classic, and yet an attempt to make a dentist of him would destroy his usefulness in life, make him a detriment to the community in which he practices, and not a credit to the dental profession. Therefore, the first six weeks of the college course should be spent in finding out who are properly qualified to be dentists, by nature as well as by training; and those who are not fit should have their fees refunded and should be persuaded to select a more suitable calling. The 'plucking' should be done at the beginning of the college course rather than at the end."

It would also be well to look more carefully after the training

of the students in the practical departments. It is a noticeable fact, that since the increase of the term of pupilage, from two to three years, while the scientific and theoretic knowledge of the graduates has increased to a marked degree, the practical has not only failed to keep pace with it, but has actually decreased. Are we, as a profession, sacrificing the practical to the theoretical?

According to the reports given by students, the means and appliances in some of the colleges for pursuing the practical studies are absurdly inadequate, in some instances there being only one blow-pipe for the use of several hundred students, and sometimes no chance of obtaining instruction in its use even then. The demonstrator, so called, being engaged in the more important(?) work of looking after the business part of the insertion of artificial dentures, for a consideration, which, by the way, is netting a good round profit to the college. Some colleges seem to be giving instruction only in the direction in which there is a direct pecuniary benefit to themselves, instead of educating the student to a higher standard of proficiency in mechanics.

I have had graduates tell me that the case they soldered before the Examining Board was the first piece of metal work they had ever done; and one man acknowledged that he had never had a blow-pipe in his hand before.

The colleges may claim that every student has to submit a satisfactory piece of metal work as part of his examination and a prerequisite to graduation; but do they inquire carefully into the question of who made the piece?

In too many instances does not the effort to swell the college treasury overbalance the educational features? Are not many teeth, that by proper treatment could be saved, sacrificed to make way for other work that will pay better, thus doing injury to patients and depriving the student of an important means of education? How many students when they graduate, are really competent to treat pulpless or abscessed teeth?

Many difficulties in active practice would be simplified by proper instruction from a demonstrator during college instruction.

Is it not as important to have a competent corps of demonstrators as of lecturers? But, in fact, there is only one competent demonstrator. His duty is to apportion the patients to the students, and handle the gold and cash. This leaves him little time to advise and assist the students in their work. This is left to under-graduates, who are appointed assistant demonstrators. If

the colleges would provide a sufficient number of first-class demonstrators to be constantly on hand during clinic hours to personally instruct students in the correct diagnosis and treatment of cases, the percentage of failures before the Examining Boards would materially decrease. These remarks will apply equally well to either department of the practical education in our colleges.

While on the subject of college clinics I cannot resist alluding to fees. The present system employed in many institutions of having fixed prices for operations, places them about on a par with the so-called "associations" which are doing so much to lower the standard of dentistry. In both, the work is done by the inexperienced and incompetent, and at corresponding low prices. The colleges should return to the old method of simply charging for the material used, and making the clinic a dispensary in the true meaning of the word.

The method of procedure in the mechanical examination before the New Jersey Board is as follows: Every candidate is required to make a metal plate, band it, grind and back the teeth, and invest ready for soldering before the board. Sometime since, it became apparent that, in a great many instances, the character of the preparatory work and the final soldering differed so markedly, that it was impossible that the same person should have done both. Investigation proved there were persons who made a business of supplying students, who were to appear before the board, with plates ready for soldering; it was also found that these same persons were in the habit of making the graduating cases for students in the colleges, charging them different prices, according to style and finish. The board met this by requiring each applicant to make an affidavit that he did all the work on his plate himself.

The fact that a student can buy a plate, present it, and have it accepted as his own work in college, certainly confirms the lax way in which the clinics are conducted. A demonstrator in the mechanical department should know whether a graduating piece was made in the college laboratory or not. But worse even than this comes the report that sometimes the demonstrators have themselves made these plates for the students for a fixed price.

Another reported condition of affairs in one of our colleges seems to me, if true, to deserve unqualified disapproval from the profession. It is that a certain dental house holds such a large interest in it that the students say they dare not buy instruments

from other houses, because by so doing they would jeopardize their chances of graduating. If this report is true, is it not time that the profession insist on knowing more about the way in which our colleges are conducted, and where reforms are needed?

Let the profession, the colleges and the boards work together to produce a higher standard of intelligence and skill.

Dr. James H. Daly says: The presence of green-stain on the teeth is such an objectionable feature in itself, by its unsightliness, that immediate removal is requested and insisted on by the patients; but calculi, with its insidious way of attaching itself in out-of-the-way places, infringes on the tooth-structure in such a gradual way that it is thought to be part and parcel of tooth substance; and not till in some accidental way a piece becomes dislodged, causing the patient to think a piece of tooth-structure has been broken away, does the mouth receive any attention as regards such deposits, and then, in a great majority of cases, in a very superficial manner. The thorough cleansing of teeth is not the work of the student, but of the most experienced and careful operator. There is no part of our work that is more important nor where more painstaking and careful manipulation is required. The deposit of nodules of tartar on the roots of teeth, with certain conditions of the blood favorable to its development, will cause pyorrhea; but it is still an open question whether the deposit is the cause or the result of the diseased condition.

For years I have been using pieces of ⅞ inch diameter thick, but soft rubber tubing, over the ends of my forceps to prevent pinching cheeks, lips and tongues, and the striking of teeth in opposite jaw. One and three-fourth inch long tubing is slit down its entire length on one side, placed over the ends of the forceps and kept in place by a thin rubber band which gives all the play necessary, and if done properly will cause no interference. Another little hint which may be useful to some, is that of using an old tin perforated dipper or oyster ladle to hold flasks in hot water during softening of wax and in the washing out of the wax, by holding the dipper over a bucket and directing a stream of water from a light sheetiron tea-kettle over the open flask halves. Tongs are often likely to slip, causing the flasks to fall to the floor.

Wistar P. Brown, Germantown, Pa.

NEED OF EXERCISE.

Civilized man who will not exercise, does not, as an average live out half the term of his allotted three-score years and ten. Lack of exercise is not the sole cause of this degenerative tendency, of course, but it is one important cause. Hence, recognizing this, it becomes the duty of man, in virtue of his boasted rationality, to dispel this cause, and by giving proper attention to his body to prepare his mind for further conquests. The necessity for this forces itself on him in a way that leaves no ground for question. The only things to be determined are the degree of development that is to be desired and the methods by which it may best be secured.

As to the degree of development that will tend to preserve the health of the muscles and other organs, it is, of course, says a writer in *Harper's Weekly*, impossible to speak except in general terms. Every one secures some measure of exercise in the routine of his ordinary life. But very few vocations are calculated to give the various muscles of the body symmetrical exercise. The rational thing, of course, is for any individual to exercise perfunctorily those sets of muscles that are not exercised naturally in his ordinary manner of living. For the vast majority of people under ordinary conditions of living, the muscles that are most slighted are those of the chest and upper extremities. Nearly every one is obliged to walk enough in a day to keep his leg and thigh muscles in a condition of reasonable tonicity. But the average individual has chest and upper-arm muscles that are flabby and undeveloped to the last degree.

Measurement of the few average arms will at once satisfy any one of this. There was a time, doubtless, when our ancestors had arms as large as their legs, perhaps even larger. Our remote tree-dwelling relatives have such arms now. But centuries of biped use have developed our lower extremities disproportionately, till now the most fully developed human arm bears no comparison in size to the thigh of the same individual (if normal). It is held by anatomists that the fully developed upper arm at the present stage of our racial evolution should be of the same size as the calf of the leg, and this size, it may be added, the same as that of the neck.

These measurements being taken as the criteria of perfectly symmetrical development, any one may easily find out for himself

how far he falls short of such development. As a rule, the tape-line will show at once that it is the upper extremity which needs attention. It is not to be expected that the person who is merely exercising for health will ever develop his arm till it meets the standard of symmetrical development, nor is it necessary that he should do so. So long as he works in that direction he is on the right track, and if he keeps the muscles in "tone," so that they tend to keep him erect, and are sufficiently firm to give support to the blood-vessels that penetrate them, he will accomplish all that is absolutely necessary. *U. S. H.*

CLASPS IN PLATE WORK.—I am in no way in favor of clasps in plate work, or the so-called movable bridges, where they are held in the mouth by clasping to the natural teeth. However perfect we may think the fit of the band, there is always enough friction to wear away the enamel, and, generally, to cause sensitiveness. Where it is possible to clasp a gold or porcelain crown, or to a tooth banded with gold or platinum, it is all right, and will work very well. Much good service being derived from partial plates inserted in this way, when the shape of the mouth makes clasping necessary, but to clasp to the naked teeth is to be condemned.

The practice of clasping partial rubber plates is carried on by dentists where it is absolutely unnecessary. I have had patients come to me with sore mouths and sensitive teeth caused by the friction of clasps, when I have given them the best of satisfaction with a good fitting plate minus the clasps.

Dr. George C. Schwarz, Edwardsville, Ind.

In lower plate work, where one good lower tooth remains in the mouth, it should by all means be retained, as affording a good anchorage for the lower denture, whatever tooth it is. I do not believe, however, that there is any use in retaining the upper cuspids if all the other teeth are gone, because a more successful denture could be inserted with a full plate than with a partial one of this kind. I believe dentists are very foolish in advising patients to retain those upper cuspids under the idea that they tend to preserve the contour of the lips and face. This I do not believe to be the fact; on the contrary, I believe they are a source of infinite trouble to the patient and tend to weaken the upper plate.

L. P. Haskell.

DO THE ONE THING WELL.

E. W. Bok.

Digression is just as dangerous as stagnation in the career of a young man in business. There is no position worth the having in business life to-day to which a care of other interests can be added. Let a man attempt to serve the interests of one master, and, if he serves him well, he has his hands and his head full. There is a class of ambitious young men who have what they choose to call "an anchor to the windward" in their business. That is, they maintain something outside of their regular position. They do this from necessity, they claim. One position does not offer sufficient scope for their powers or talents; does not bring sufficient income, and they are "forced," they explain, to take on something in addition. I have known such young men. But, so far as I have been able to discern, the trouble does not lie so much with the position they occupy as with themselves. When a man turns away from the position he holds to outside affairs, he turns just so far away from the sure path of success. To do one thing perfectly is better than to do two things fairly well. It was told me once, of one of our best known actors, that outside of his stage knowledge he knew absolutely nothing. But he acted well—so well, that he stands to-day at the head of his profession, and has an income of five figures several times over. All-round geniuses are rare—so rare that we can hardly find them. It is a pleasant thing to be able to talk well on many topics; but, after all, that is but a social accomplishment. To know one thing absolutely means material success and commercial and mental superiority, I dare say that if some of our young men understood the needs of the position they occupy more fully than they do, the necessity for outside work would not exist.

Dr. Louis Ottofy, of Chicago, says: Since the last report, one dental college, the Dental Department of the University of Omaha, has been established, making a total of forty-eight now in operation and granting degrees. The number of matriculates at the last session, in the forty-two colleges reporting, was 5,277; graduates, 1,226. Four years ago, twelve of the thirty-three colleges then existing graduated three-fourths of the entire number. Three years ago, ten colleges graduated 851 students, while the

remaining twenty-eight graduated 632. This year six colleges graduated 525, the remaining forty-one, 701.

METHOD OF VERIFYING THE QUALITY OF ALCOHOL.—According to *Cosmos*, Dr. Coiffier has recently made known a very simple process of quickly verifying the quality of alcohol. The process consists simply in igniting in a saucer 20 grams of the alcohol to be tested and in attentively examining the different phenomena that occur during the combustion. The purest alcohol burns with a uniform blue flame without smoke, disengaging an agreeable odor, and without leaving any residue. Now, there is none of the substances used for sophisticating alcohol that does not modify the method of combustion of the latter. Thus the inferior alcohols, the ethers, the fatty acids, all oleaginous substances, essence of turpentine, benzin, etc, even in extremely minute quantity, cause the appearance in the blue flame of long white or yellow fugacious trains of light that stand out clearly from the blue ground of the flame. The presence of foreign substances in alcohol also renders the flame of the latter smoky, as may easily be seen by holding a cold saucer over it. If the alcohol is supercharged with foreign substances, the saucer will become covered with a more or less abundant carbonaceous deposit.

There is a portion of the United States where hygiene is observed. It is in the State of California. There the children are brought up largely out of doors, with more freedom to indulge their natural love of exercise and play than they have in the older communities, and, in consequence, they are healthy, hearty and cheerful, and have good teeth. That such a life is not conducive to the highest intellectuality goes without question ; but we will all admit that a perfect healthy animal life is to be preferred to intellectuality. We bespoke for general education a more rational treatment ; the physical well-being should be cared for even more conscientiously than the mental growth. This is coming to be the rule at our universities now, and more and more thought is being given to the development of the body. *W. X. Sudduth.*

SOLIDIFIED PETROLEUM.—It is stated that a French naval engineer, P. D. Humy, has succeeded in solidifying petroleum and low-grade bituminous coal. He claims that three cubic feet

of the compound will represent the bulk of a ton of coal, and will last combustible as long as fifty tons ; furthermore, the compressed petroleum is not dangerous ; can easily be stored ; will not evaporate or explode, and requires very little draught to burn, producing no smoke nor smell, and only two or three per cent of ash. The new fuel burns only on the surface, thereby insuring slow combustion. Should such an invention materialize, Atlantic-going steamers could carry 2,000 tons of compressed petroleum instead of 5,000 to 6,000 tons of coal, which would increase the speed by reducing the weight. Ships and war vessels could also remain out at sea for several months, and the necessities of coaling stations would be obviated. Elaborate experiments are soon to be made at Sheffield, England.

It is a lamentable fact that too little attention is given to the hygienic surroundings of the pupils in the schools, and by far too little to the nature of the food and the manner of eating. The aim often seems to be to so prepare the food that it will require little or no mastication before it is swallowed, and when solid food is taken it is not sufficiently masticated to properly prepare it for the digestive organs. Some years ago a friend requested many of his patients for reports as to the number of bites it required to masticate different foods. He especially desired to learn how much less children chewed the food before swallowing it than their parents. He got reports from one hundred and fifty intelligent people, and learned that practice in this regard varies very much, that children generally were entirely too apt to bolt their food. To encourage the habit of chewing it more thoroughly he had advised parents to give the children chewing-gum, much to the disgust of many of the parents. He thought the habit of swallowing food before it was properly masticated the cause of insufficient nourishment in many cases. *M. H. Fletcher.*

THE OFFENSIVE AMERICAN HABIT.—The national vice of the American people is spitting. The least civilized nation on earth does not offend so badly in this respect as the American. Expectoration is the badge of all our tribe. You can spot an American in any quarter of the globe by this offensive habit. From the highest to the lowest, all Americans spit. In England spitting is a habit almost confined to the lowest and dirtiest class. Here it is practiced by all impartially. The few Americans who don't

spit are exotic creatures, frequently Anglomaniacs. Many of our most eminent citizens are habitual spitters.

A MECHANICAL HORROR.—*Machinery* is a monthly journal published at Johannesberg, South Africa. In the October number, just received, is an account of a most remarkable clock belonging to a Hindu prince, which the editor thinks the strangest piece of machinery in India. Near the dial of an ordinary-looking clock is a large gong hung on poles, while underneath, scattered on the ground, is a pile of artificial human skulls, ribs, legs and arms, the whole number of bones in the pile being equal to the number of bones in twelve human skeletons. When the hands of the clock indicate the hour of one, the number of bones needed to form a complete human skeleton come together with a snap; by some mechanical contrivance the skeleton springs up, seizes a mallet, and walking up to the gong, strikes one blow. This finished, it returns to the pile and again falls to pieces. When two o'clock, two skeletons get up, and strike, while at the hours of noon and midnight the entire heap springs up in the shape of twelve skeletons, and strikes, each one after the other, a blow on the gong, and then fall to pieces, as before.

In Vermont, a naturalist has succeeded in inducing fresh-water mussels or clams to make beautiful pearls to order. He placed a small oval lump of beeswax between the valves of the mollusc, which at once proceeded to coat it with the pink nacre which is usually kept for the purpose of lining its shell. The mussel was kept in an aquarium for several years, and the result is an enormous pearl of great lustre and beauty. It belongs to a species common in American waters, and there seems to be no reason why it should not be put to work in a commercial way. A species of fresh-water mussel, locally known as fresh-water clams, are extremely abundant in Lake Champlain and its tributaries, and some years ago a perfect rage was inaugurated by the discovery of exquisitely beautiful pearls in the rivers of the Winooski, a river originating in the Green Mountains and flowing into Lake Champlain, through the capital of that State. The craze extended till the species was practically exterminated from the river.

The authorities of Boston University have decided that the students must either give up the use of tobacco or leave the institution.

CURRENT THOUGHTS.

BUSINESS METHODS FOR A DENTIST.

Dr. Austin F. James, D.D.S., Oak Park, Ill.

In everything we should have system. Our office hours should be the time when our patients know we are in. We should have an appointment book so arranged that we can keep a record of our daily work and of time given to each patient, so arranged that the patient's name, a description of the work done and fee can be recorded in either the cash or credit column, and each filling numbered and the tooth marked on the diagram with that number. This answers the double purpose of an appointment book and day book.

We all know how necessary it is too keep a record of peculiar cases and treatments. I use the space around the diagram in my ledger for that purpose. It somewhat mars the beauty of the ledger, but saves keeping another book.

I find when making an examination a great deal of time can be saved by using the diagram blanks. At the given appointment these can be referred to, and in that way the dentist always knows, as soon as the patient takes the chair, what operation or treatment is required.

I find that my patients are always interested when they learn that a record of their work has been retained, and I have frequently had them ask to see the diagram. These little things gain the confidence of patients and enables us to hold a practice when once established. They find that we have their interests at heart as well as our own; therefore are more willing to pay a good fee, and are always glad to send us their friends. I consider it our business to influence or to educate our patients, as it were, so that when in need of services again they are sure to return to us.

As regards every-day office expense, I should say every dentist needs an attendant. However many kinds of labor-saving appliances he may have, an attendant can save time and exertion enough in one day to more than pay a week's wages. An assistant should be so trained that, with scarcely a word, whatever the operation may be, the medicine or instrument required is at hand. Judgment as regards time is also necessary, to prevent conflicting appointments.

In buying supplies, however near we may be to a depot, it is a saving to stock to have a good supply of materials. Then make it a point not to be wasteful in the use of them. Buy every instrument or appliance actually needed. This requires judgment. Look into almost any dentist's operating room and see the dollars' worth of instruments that are never used, when a little consideration would have shown the impracticability of buying them.

A very essential feature in all kinds of business is to keep the credit good, and I would say that the only way to do this is to keep out of debt. A business that is known to be on a sound financial basis is bound to increase. This holds good in the practice of dentistry. If we have the reputation of following our profession on business principles, the confidence of patrons is gained and retained. They feel that they are employing a reliable man and are sure of good, honest service.

We have to do for all classes of people, the poor, the moderately well-to-do, the rich, the unbusiness like person and the shrewd driver of bargains. To meet each of these and know how to read and manage them, requires the best of judgment. Some of our patients who are in very moderate circumstances financially, are most appreciative of good work. They are always interested in the method of operation, and we can see our labors are appreciated. However, one cannot live on a "thank you," nor is it necessary. This class of people do not desire our services for nothing; but in rendering the bill care should be taken to make it as reasonable as possible. They leave well satisfied, and are always ready to say a good word for their dentist. We very soon hear from their friends who are, often, able to remit liberally. I have had several instances where pleasing an honest serving girl has gained the family with whom she was employed, and through this one patient have had work amounting to hundreds of dollars. Often people who are well able to pay, but who belong to the "want something for nothing" order, are much more difficult to convince of the value of services received, and in return for earnest, honest efforts we find great difficulty in collecting our fees.

We sometimes need to turn instructor when we have the "busy" man to deal with. He comes with but a moment's time, in which to do an hour's work. He expresses no interest in what is to be done, except that the work be hurried through as quickly as possible, and with the least pain. When it falls to

our lot to educate one of these men it usually requires more than an ordinary management. If the patient in his hurry to business, has neglected to use proper care in cleansing his mouth, a good plan is to make him realize exactly what he has been doing. This will generally set him thinking, and he will at once resolve to have the work properly attended to, saying, "Go ahead, doctor, and do everything that is needed." After we have made these patients understand that they are to be advised by us, and when they feel that we have rendered good service, we promptly receive a check.

Another time we may have for our patient a person who lacks business ideas. They do not see the necessity of keeping appointments promptly, and cannot understand why we charge them for the time that they have wasted for us, considering our time of no more value than their own. I think it is a very good plan to work this class of patients in at odd times, when it is possible that we may have to disappoint them. Perhaps it is when we have not finished an operation on hand or have already overworked, and so we can send them home and let them come again some time.

It is our duty to educate patients up to the standard of good dentistry; to make them realize dentistry is one of the advanced professions, and that we are making rapid progress in science and skill. We should show them the difference between our methods of operation and the old way. Always speak well of brother dentists, whenever an opportunity is presented, and let patients know that we are working in harmony as a profession, also making every effort for advancement and that the public is receiving the benefits therefrom.

If every dentist sees to it that he loses no opportunity to acquaint his patients with the progress being made, we shall soon raise the standard of dentistry to where we wish to see it.

Dental Review.

In taking impression for partial upper or lower, with composition, I find I get perfect impressions, as follows: Take the impression the usual way and have a pan of hot water near, after taking impression from the mouth hard, then dip it in the pan of hot water so as to soften the surface, place it back in the mouth and where the impression was faulty at first, the second time it fully adapts itself to all portions of the teeth and ridge and palate.

C. C. McCloud.

CARBORUNDUM AND THE NEW WORKS AT NIAGARA FALLS.

Owing to the limited facilities for producing this new abrasive material, its use has been restricted to the finer trades, such as the dental and manufacturing jewelers, fine tool grinding, and kindred industries. Owing to its hardness the finest impalpable powders have remarkable cutting powers, which greatly enhances its value, making it applicable to larger fields when the cost shall have been sufficiently reduced and the quantity of production unlimited. The original plant is located in Monongahela, Pa., whose steam power is used to produce the current for the furnace, the daily capacity of carborundum amounting to only 300 pounds. To produce carborundum at the lowest cost the company has installed a large plant at Niagara Falls, which was quite recently put in operation. One thousand electrical horse-power is at present utilized. The crude materials from which carborundum is made are coke from the Pennsylvania bituminous coal fields, white sand from Ohio, salt from New York State salt works and sawdust from the mills of Tonowanda. The coke is ground and sifted into assorted sized grains, which are mixed with the proper proportions of salt, sand and sawdust. The work is done by automatic machinery at the least expenditure of manual labor. The mixture is ready for the electric furnace, which is a crude rectangular brick box made without cement, mortar, or other building material. In the center of each end is placed a large bronze plate, and these are connected by means of four massive copper cables with the copper conductors conveying the current. Connecting with the inner surfaces of the bronze plate are 120 carbon rods, 60 to each plate, about two feet in length, and passing through the end walls of the furnace and extending toward each other, thus constituting the interior terminals. A core or cylinder of granules of crushed coke extends from one carbon electrode to the other, and around this is packed the mixture alluded to above. The high-pressure cement is transformed down to low pressure, thus increasing the quantity, the latter producing the heat. The current of 1,000 electrical horse-power is sent through the furnace by means of the electrodes, cylindrical core, etc., for a period of twenty-four hours, making a total expenditure of energy of 24,000 horse-power hours, which would cost, at the rate charged for current in our city, five cents per horse-power hour, $1,200. This

vast amount of energy is transmitted to the core, twenty-one inches in diameter and about nine feet long, and heats it to about 7,000 degrees, the temperature of graphite formation. At the end of the run one end of the furnace is removed, and surrounding the core in the form of a cylinder is a beautiful crystallized formation, solid near the core and loose in structure at some distance. The size of the crystals also diminishes as the distance from the core, and further out occurs a black mass, composed of the original mixture, which has not been acted on. The crystalline material is carbid of silicon, and has been named carborundum by E. G. Acheson, the discoverer. About two tons of carborundum are produced from one furnace run, and provision has been made for five furnaces. After the individual crystals have been separated, they are treated with an acid to remove all solubles, then ground, dried and sifted in the various sizes used in the market. *Electrical Engineer.*

BE CHEERFUL.

Catharine Armstrong.

Good nature—that is, inherent, inborn cheerfulness—is one of the most desirable of mental characteristics. One possessed of a natural temperament that inclines to make the bright and pleasant side of life predominate and prevail above and beyond the dark and seamy side is indeed to be envied.

To some a cheery, optimistic disposition comes by inheritance just as surely and legitimately as a fair skin or any other personal feature. Such favored souls throw out their intellectual radiance as naturally and as charmingly as flowers come out in their beautiful colors when the winter is over and gone. As the very earth is wakened to life by the genial warmth of spring's early footsteps, so human nature feels the inspiration of happy and cheerful influences.

The clouds will rift when a sunny nature sheds its beams around. Who can wear a "long" face and mope in melancholy when a gladsome, happy face looks in on him?

A cheerful temper is a perennial benefit as well as a very rainbow of peace and joy in the home, for it bears us over and through the rough places, and not only carries its own comfort with it, but, being infectious, it distributes happiness to all around. But pity for those who come into this beautiful world from a gloomy,

uneasy, grumbling stock of ancestry, who can see only ill in everybody and everything, evil only everywhere; believing naturally, too, that the "race is degenerating, that all men are dreadfully wicked" and "going to the dogs," that nothing is as good or correct as it "used to be!" The unfortunates born to these common, pessimistic ideas surely deserve our commiseration. What comfort can such people get in life or living. How unpleasant to meet them! They carry discomfort forever with them; the very face grows into wrinkles and frowns, telling plainly of mental unrest and discontent, unillumined by one ray of gladness or enjoyment in all the pleasures or delights of life.

Why do not such people strive to cultivate cheerfulness, to gather sunbeams and not clouds into their hearts and natures? They surely could if they only would, for in no direction does the real force of "will power" stand out more conspicuously than in this—a will to keep at bay that mental disease, the "blues," to see the light and not the darkness. More mental agony is really endured in dread and fear of what may happen than on account of all that does actually happen.

Many a bridge is mentally "crossed before we come to it," the wise old adage to the contrary notwithstanding; and much needless worry and anxiety are fostered thereby. A large majority of most people's troubles are merely the anticipated ones. Small matters, trifling surroundings, often cause really absurd despondency. Analyze the cause of mental depression, and often it is found ridiculous and groundless. Even the weather is a reliable thermometer of some people's mental condition—sunny or stormy, as the case may be; all life and exuberance in pleasant days, melancholy and "blue" in stormy weather.

The companionship of those who are addicted to mental depression is anything but desirable. The very foundation of the happy home fireside should be cheerfulness itself. There all the holy joy of mutual love and affection should be cemented by the beneficent and peace-giving bond of cordial, happy, hearty good will.

When genuine sorrows do come, as to all they some time inevitably must, the heart is stronger to brace against them and to endure than if health and courage had been fretted away by imaginary troubles and by "looking on the dark side," and the glad thought is laden with comfort that the good Father who carries us along in the sunshine will be at the helm in the shadow.

The Outlook.

TREATMENT OF DECAY IN PROXIMATE SURFACES OF BICUSPIDS AND MOLARS.

Julius G. W. Werner, D.M.D., Boston, Mass.

For the average person the practice of dentistry need be no more tiresome nor detrimental to health than other professional occupations. When a dentist, working at the chair from six to eight hours a day, becomes feeble in health, pale and careworn before or about the time he reaches middle life, it must in a great degree be attributed to a constant neglect of laws governing health. Eight hours' work, eight hours devoted to recreation (and by recreation I mean physical and mental culture, counteracting injurious tendencies one finds in his daily occupation), and eight hours sleep and rest ought not to be considered a hard lot, even for a dentist.

I find my calling a source of pleasure and satisfaction that I should not expect to find in the general practice of medicine, or in any of its specialties, except dentistry. With our modern mechanical adaptations, improved instruments and the less pain-producing methods of operating, dentistry need not be very painful nor fatiguing to either patient or operator.

To us it should be a source of great pleasure and satisfaction that such a large percentage of the operations we are called on to perform are of a surgico-mechanical nature, whose *modus operandi* and prognosis are well understood, scientific and eminently satisfactory. With us it is surgery and mechanical art that stop decay and restore lost tissue and function. No pills concentrated or diluted *a la* Hahnemann; no mind-cure, Christian science, hypnotism, or the like, will ever cure or help in restoring decayed tooth-substance.

In filling of proximate surfaces of bicuspids and molars, and on the great importance of such decayed surfaces being restored to full or very full contour. Let us consider, then, that we have decay between two bicuspids involving the greater portion of the proximate surfaces, and where good judgment and favorable conditions call for a lasting or so-called "permanent" filling.

If such cavities are filled with cement, at the end of a year, or two at the longest, the fillings will have become worn sufficiently to need refilling. If they are not then refilled to a flush or full-contour condition, the proximate surfaces will either become unnaturally crowded together, or there will be a space left between

the teeth, affording lodgment for food, which makes it uncomfortable, unclean and irritating to the gum. If such decayed proximate surfaces are filled with gutta-percha, a practically similar defective condition will occur in a short time; if filled with amalgam, we get discoloration of tooth-substance, oxidation of the filling-material, and weak edges, particularly at the cervical wall. Again, amalgam, as to looks and, according to the belief of many, as to health, is not a very desirable filling-material.

What must be considered then, on the whole, the most desirable and lasting filling for such cases? It is gold, soft, non-cohesive gold, with perhaps gold and tin at the cervical wall, and gold and platinum near the grinding surface. These filling-materials, from their malleability, can be so adapted to decayed and worn tooth-substance, and are so compatible with it, as to restore perfect contour, and, when skilfully used, will prevent decay for many years, in some cases forever. I have always been a thorough believer in gold, and am more strongly convinced to-day than ever of its merits as a filling-material, when skilfully used, and when full contour, and even more than full contour, of the decayed tooth-substance is restored.

The merits and demerits of gold depend on the judgment and skill of the operator much more than on a so-called compatibility or incompatibility with tooth-substance. That all-hammered, all-cohesive-gold fillings, which only restore partial contour, should fail in anything but the very best tooth-substance need not surprise or discourage any one. It is very different when soft or non-cohesive gold, under matrix pressure, is thoroughly adapted to the cervical wall and all the edges of the cavity, and cohesive gold is used only near the grinding surface, and the whole filling is a thoroughly condensed and a well-rounded-out full-contour operation.

To go still further, when soft, non-cohesive gold in conjunction with tin-foil is firmly packed against the cervical wall, and eight-tenths of the cavity is filled with soft or non-cohesive gold and the remaining two-tenths with cohesive gold and platinum, we then have what has proved, in my experience, an eminently satisfactory and decay-preventing combination. Such fillings will show, after a while, in many cases a slight oxidation of the tin and gold portion at the cervical wall, but no discoloration of tooth-substance, and give a condensed, hard grinding surface that in years after will show little if any wear and, I may say, little or no decay. But you may say that such operations will

involve an amount of time and pain to the patient that will make it difficult to apply it in practice as a general rule. To this I reply an emphatic "No." To the one skilled in adjusting a properly shaped steel matrix, such operations are reduced to simplicity for the operator and comparative comfort to the patient.

Let us take a case in question: We have two extensively decayed proximate surfaces of either bicuspids or molars. If they have been filled with either cement, gutta-percha or amalgam, and their worn or defective surfaces have allowed the teeth to come together, the opposite of full contour, spread them apart sufficiently to gain the necessary space. This done, the teeth should be allowed to rest from two weeks to two months, as may be deemed most advisable. By so doing the teeth become firm and rested in their new and proper place, and the gum is pressed out and away from the decayed surfaces, giving space and accessibility to all portions of the tooth to be operated on. This spreading apart of the teeth and pressing away of the gum can be achieved in various ways—for instance, with gutta-percha, cotton, waxed linen tape, the Perry separator, or all combined. If they are cavities of decay with no fillings, with soft and sensitive dentine, disinfect the cavities with campho-phénique, or oil of cloves, and fill temporarily with cement, in whole or in part, excavating little or none, and proceed with the separation to acquire the desired space. Cases treated preliminarily in this way are, when finally and permanently operated on with gold and the matrix, in a much improved condition, and the patient experiences less pain and annoyance, the tooth not being sore to the necessary pressure.

To adjust a steel matrix, hold such firmly in its proper position with a wooden wedge at the cervix, gutta-percha being packed all around it, and, if necessary to give steadiness or to gain more space, to apply a Perry separator, is to the experienced but the work of a few moments. Nor is a properly shaped steel matrix firmly and accurately adjusted, painful to the patient, but, on the contrary, it steadies the tooth to be operated on and gives to the patient a feeling of support and comfort. Having the cavity properly excavated and shaped, and the matrix firmly adjusted, we begin to fill to full contour.

A much-favored method with me is to fill a small portion of the cavity, that of the cervical wall, with soft or non-cohesive gold and tin, in proportion of one sheet of No. 4 gold to one-half sheet of No. 4 tin-foil, folded into suitable strips, with the gold on

the outside and the tin inside. I believe soft gold and tin at the cervical wall to be a better decay-preventive filling than gold alone, and years of practice in this, both with matrix and without, have confirmed this belief. The slight oxidation of the tin seems a direct benefit, and has no special disadvantage, for we get no tooth-discoloration from it, as is the case when amalgam is used.

The non-cohesive gold and tin-foil at the cervical wall and all that portion which is of soft or non-cohesive gold should be condensed with hand-pressure. The last two-tenths of the filling, the portion which comes toward the articulating or occluding surface, is made of cohesive gold, or, what I like better yet, of gold and platinum, and it should be annealed and hammered well into position.

We have, then, at the cervical wall soft or non-cohesive gold and tin, then the greater portion of the filling of soft gold, and the remainder of gold and platinum. All but the last portion of the filling is made with hand-pressure, the whole being so shaped with the matrix as to make it a well-rounded, solid-fitting, full-contoured filling.

What do I believe, then, to be the essentials of success in treating decayed surfaces of bicuspids and molars? First, the matrix; second, soft or non-cohesive gold and tin at the cervical wall, and gold and platinum at the occluding surface; and, third, the whole filling to be solidly and thoroughly condensed against the walls of the tooth and matrix, making it well rounded out to full contour, at or near the grinding surface, with a free space near the neck of the tooth and the gum. When two proximal surfaces are filled in this way, nothing but gold touches, and the tooth edges are far apart.

In cases where it has been necessary to do considerable separating of the teeth, and where the gum had to be pressed out and away from the margins of cavities, the gum will grow down and fill nearly all the clear space that always should be near the neck of the teeth.

In properly shaped full-contour work each act of deglutition causes enough suction around and about the cervical wall, the neck of the tooth and the edges of the filling to keep the secretions changed, and in this way helps materially toward lessening redecay.

The one who has experienced the discomfort and annoyance, amounting at times to actual painfulness, resulting from spaces

between proximate surfaces of bicuspids and molars, where food crowds in, irritating and inflaming the gum, can appreciate the comfort, satisfaction, healthfulness and cleanliness that exist where full contour keeps out food and protects the gum.

In my estimation no words are strong enough to condemn the semi-barbaric method of filing teeth apart, leaving so-called self-cleaning spaces, which really are and should be called "self-filling" spaces, or of leaving any space between, or any flat approaching fillings. Such are unnatural, unscientific and unclean. Non-comprehension of Nature's design, unskilfulness and incompetency are acountable for such methods of operating.

How different when, by a thorough understanding of what is needed and a love for our calling and duty, a delicate and firm hand becomes skilled enough to restore such decayed proximate surfaces to full contour, comfort, beauty, usefulness and permanence.

International Dental Journal.

THE SUCCESSFUL DENTIST.

C. E. Bentley, D.D.S., Chicago, Ill.

It has often occurred to me that amid the din and battle of competition which is so hotly waged among the followers of our profession, in our greed we might dull our sense of the true and the beautiful which so largely characterizes the true success.

The pursuit of the almighty dollar is to-day our supreme vocation—with it as a corollary goes gross materialism. That is to say, wherever and whenever a people subordinate their finer sensibilities at the altar of Mammon, gross materialism follows close on its heels.

The world applauds the money-getter; closes its eyes as to how he gets it; rocks him in the lap of indulgence till some day the very child of its fondling shows its teeth of avariciousness and dehumanizing instincts and a clash ensues. The offspring of its caresses becomes its common enemy, and they stand armed and arrayed against each other. Inordinate selfishness has blinded its sight to the true and the beautiful.

I applaud the man who, by his superior genius, is able to so marshal the forces of nature and so master the intricacies of cause and effect as to wring from nature's labyrinthic hiding-places the treasures to which they so tenaciously cling. But while I applaud the money-getter, I revere the money-spender. That man is the champion of the true and the beautiful who considers himself

trustee of the wealth he has accumulated, using the power his wealth gives him for good and not for evil—spreading sunshine instead of gloom—humanizing instead of dehumanizing.

Men who sacrifice their human interests for the benefit of the common weal; men who give thousands on thousands for institutions which brighten the gloom of ignorance, illume benighted minds, rearing good citizens grounded in the principles of good citizenship; men who have a firm grasp on the living sociological questions of the day and build for the morrow.

To the student of the affairs of the sociological horizon this tendency on the part of our business men, of our public schools, lends a hopeful sign.

If what I have said of the business man be true, how much more am I to expect of the professional man?

A storekeeper may sell you a piece of shoddy for wool at the wool price, and has only injured you to the extent of deceiving you by his wilful misrepresentation.

If a physician is called to the bedside where the life of his patient is intrusted to his care, and he wilfully misrepresents the case or his ability, it would be a grave offense. The injury, unlike the case of the merchant, might be irreparable; a life might go out as a result of his duplicity.

The lines that lead to true success are the same everywhere. For one to be a successful dentist, he must be first enthusiastic; he must be ablaze. "A man with only one idea all aglow with enthusiasm will accomplish more than a ripe scholar with a thousand grand thoughts hidden away in pigeon-holes."

Away with your icebergs, though they glisten beautifully. Give us men with warm, genial, inspiring natures; intelligent, but with intense passion; aggressive, daring, venturing their life on success. Such men will find their place somewhere, some how, some time.

A professional man should be cultured. The more liberally educated a man may be, the better dentist he will make. I am here reminded of Prof. Huxley's criticism of the empiricists. Says he, "Indeed, I am so narrow minded myself that if I had to choose between two physicians, one who did not know whether a whale is a fish or not, and could not tell gentian from ginger, but did understand the application of the institutes of medicine to his art, while the other, like Talleyrand's doctor, knew a little of everything, even a little physic, with all my love for breadth of culture, I should assuredly consult the latter." But in reality

the man who is greedy of what his own art contains is not satisfied with being illy informed of the things outside.

He must have individuality. Show your colors; not offensively, but be not ashamed of your convictions. Are you ashamed of the rottenness that permeates your municipal government? If so, say it, act it, vote it. He should not attend church for the business he could get out of it, but for the benign influence that goes with that attendance to a part of man's nature that has been recognized since man came on the earth.

He should be alive to and in touch with the burning questions of the day, conversant with good literature, keeping apace with civilization's progress, and always in the front ranks of his profession. It is easy to be a nonentity and sink in the grave of oblivion, but it needs courage to be the representative of something useful and aggressive.

He must be physically sound, without which he will be unable to bring the serviceable attributes and the fertile brain so necessary in the successful practice of his profession.

His manner should be good; his demeanor kind and gentle, indicating the inner worth.

He must be morally sound. This is the keynote to the symphony, the compass of the ship, the main path to the broad highway of success. The moral safety of the patients entrusted to his care must be an assurance beyond peradventure; like Cæsar's wife, he must be above suspicion.

He must collect his bills and pay his debts. *Dental Review.*

ELECTRICITY IN DENTAL PRACTICE.

Dr. L. E. Custer, Dayton, Ohio.

The ever-increasing field for the application of the various forms of electricity in dental practice makes it necessary that the dentist should become familiar with the common electrical terms and the different commercial currents in general use.

There are three terms which are the foundation for electrical calculations, the volt, ampere and Watt.

The volt is the term for pressure, and we speak of it just the same as we do of water in a pipe at so many pounds pressure. The ampere is the term for quantity, and to use the same illustration, the ampere represents the carrying capacity of the pipes or cross section of the stream of water-flowing. The Watt is the product of the volts multiplied by the amperes; that is, the quantity

of water which flows through the pipe is equal to the size of the opening multiplied by the water pressure. In other words, the Watt is the unit of electric power, and 746 Watts are equal to one horse-power. It does not matter how the Watts are made up, whether more of volts or of amperes, so long as the product of the pressure (volts) multiplied by the quantity (amperes) is equal to 746, it is one horse-power. A current of 75 amperes flowing under a pressure of 10 volts will do work equal to about one horse-power, or a current of one ampere at 746 volts will produce one horse-power. A 16-candle power lamp consumes 55 Watts, at 110 volts that would be half an ampere each, and 13 such burning at one time represents an expenditure of one horse-power. Or a current of 10 amperes at 110 volts is equal to 1,100 Watts, or one and one-half horse-power.

There are five different currents in common use. The arc light current, the 500 volt or car current, the 220 volt or power current, the 110 volt constant or Edison current, and the 52 volt alternating or Westinghouse current.

The arc current is familiar to all, and it affords an interesting example in electric arithmetic. It requires a pressure of 45 volts to leap across the distance between the two carbons of the lamp to give the light we see, but to give a steady light there should be 10 amperes of current. These 10 amperes of current are started out from the power house, and for every arc lamp through which they pass there is required an addition of 45 volts. That is, a pressure of 45 volts is required to jump the arc and maintain it in the first lamp. This lamp must be kept burning, and when the second lamp is reached, the dynamo quickly makes an additional 45 volts, and so on all the way around the circuit back to the power house. So that, if there are 50 arc lamps in the circuit there would be required 50 times 45, or 2,250 volts to send a current of 10 amperes through the 50 lamps. The high voltage of the arc current is the cause of the danger. It is volts that kill.

The 500-volt current is used mostly for street cars and heavy power work. The high voltage is used here for the same reason that it is more economical to carry water in small pipes at high pressure than in large pipes at low pressure, as well as the fact that the motors are better proportioned for their work when operated by this current. It will be noticed that these cars are always lighted by five 110 volt lamps in series; that is, it requires 110 volts to properly burn one lamp, but with 500 volts pressure the current can go through one and then another till it has passed

through five lamps, and each one will burn but little below its intended capacity. If four lamps were used they would soon burn out, because there would be 125 volts to a lamp instead of 110.

The 220-volt current is mostly used for power purposes, because it can be carried on a rather small wire and is not especially dangerous to life. This current is not, however, very common

The Edison or 110-volt current is, as you well know, almost universally used for incandescent lighting and light power. This current does not differ from any of the preceding except as to voltage. It is sometimes called the constant current because the current is continually flowing in one direction. The pressure is set at 110 volts because it is found to be economically distributed at this voltage to that point where the voltage drops below 100. For this reason it is always used in small plants, or in large plants whose wires do not run far from the power house, in thickly settled centers, and in hotels and public buildings.

The 52-volt or alternating current is used for incandescent lighting and light power also. This differs from the preceding in many ways. Instead of its flowing in one direction it flows alternately in one direction and then in the other. This current is distributed in an entirely different manner from the others. A current of very high voltage is conducted to what is known as the transformer, passing through which it induces an extra current in an entirely independent coil of wires, and this new or induced current is the one carried into the house for use. So that the primary current of very high voltage is carried on a comparatively small wire for miles about the city at quite a small expense, and gives the consumer a light which would be impracticable with a constant current at that distance from the power station. This current is used mostly in small towns and in scattered suburbs.

Of these currents, the Edison or 110 volts constant potential current, is the ideal one for dental purposes and fortunately it is the most common. It is so easily made that nearly every office building operates its own plant. Or the dentist with a gasoline engine and dynamo can be independent at a very small cost. The current is safe to life and its wiring is quite simple. It may be used for power, for light, for cataphoresis, for electrolysis and for heat equally as well. In fact, it seems as though this current was intended for dental purposes alone. Let the dentist be a little inventive, and he will see many applications of electricity that will be of great benefit. *Dental Review.*

THE FUTURE OF DENTISTRY.

Dr. F. F. Fletcher, St. Louis.

I dreamed. I thought it morning and that I must arise at once and vulcanize a case before breakfast.

I was thinking this and other portions of the day's work over, mentally arranging the details, and incidentally indulging my laziness, when suddenly there came a knocking at my chamber door, and a voice in no uncertain tone informed me I had overslept, and to arise at once as a gentleman wished to see me. Hastily I made my toilet and entered my drawing-room to receive my caller. His card showed him to be a brother dentist.

He informed me that, in answer to my advertisement, he came to apply for the position of assistant. Being pleased with his appearance I informed him I would try him, and he might go to work at once. Introducing him to the laboratory, I remarked that he might vulcanize that case while I went to breakfast, he having eaten earlier. Imagine my surprise to see his eyes open widely and hear him remark excitedly :

"Is that a vulcanizer?"

Thinking I had a practical joker to deal with I turned on my heel saying : "I'll be back in about an hour."

"Hold on there," said he, "I am going to ; and before I could say a word he had gotten out of that laboratory and slammed the door shut, looking about as nervous as a junior student about to extract his first tooth. "Oh ! I have heard of those steam bomb-shells that used to blow up and kill people when making plates was a part of every dentist's work, and not wishing to endanger my life or return to the practices of fifty years ago, think I will try to find a position in a modern office where I can practice what I have been taught."

Thinking I had a harmless lunatic to deal with I could not resist the temptation to quiz him a little. So I remarked :

"Doctor, before you go will you kindly tell me what you mean by modern dentistry, where you received your education?" etc.

"Why certainly," said he, "I am an American by birth, born, raised and educated in Havana, State of Cuba, U. S. A., and graduated A. D. 1950."

Now I was sure he was crazy, but I was becoming interested, and said to him :

"And you never saw a vulcanizer?"

"No, and never expect to except in a museum or mechanical office."

"What do you make plates out of, out there?"

"Why we don't make any except a few for country people and for foreigners. In nearly every large city there is still to be found a mechanical dentist and such work is referred to him."

"Have the teeth quit decaying out there?"

"No, doctor; the teeth do not decay nearly so much as they did formerly, but likely would if we permitted them; but by our system fully 90 per cent of the people of twenty-five years of age have never lost a tooth. People having sound teeth or even filled teeth, the mouth being kept clean and free from caries, will have less trouble with their children's teeth. You know the child may inherit poor tooth structure, imperfectly fused fissures, etc., but must be inoculated with caries, usually transmitted by kissing. You know the adage 'the more kissing the more caries,' and America leads the world in both. So you see with 90 per cent of the teeth in good shape modern dentistry is strictly operative, a pleasure to the operator and a blessing to humanity. Plates are rare, bridge-work a curiosity, crowns scarce, toothache and abscesses occur but seldom, facial neuralgia nearly exterminated, root filling—that skeleton in every old dentist's closet—buried, and whose specter walks but seldom when by accident a pulp dies and the root must be filled. The dentist is no longer a bugbear to school children, and the ruthless destruction of the first permanent molar has ceased forever. This is not local but done all over the United States, and all brought about by our system in the short space of fifty years. Truly the advances of dentistry in the past fifty years stand without a parallel in the history of the world."

He was waxing eloquent over his pet theme, so I asked him to outline the system which brought this all about.

"With pleasure. Under the old regime dentists knew their inability to save the teeth of the masses lay in their failure to secure the school children and even those under school age. How was it to be done? Some thought cheap dentistry, well advertised, would reach the masses. Accordingly they inserted columns, portraying in word pictures, their phenomenal successes, painless operations and prices within the reach of all. Many came to them and in most cases the quality of a filling diminished in proportion as the size of the cavity increased. Good teeth were sacrificed for poor crowns or barbarously extracted for still poorer plates.

"Whichever method promised the richest fee was adopted. In time the victims discovered that they had been duped and immediately decried dentistry in all forms. So this method was a signal failure at saving teeth. Few going to an office till driven by pain. How were they to be reached before this fatal warning and in time to save pulp and tooth?

"Some enthusiasts tried public lectures; societies distributed pamphlets on how to care for children's teeth. Others tried articles in the daily papers to educate the masses. Various schemes were tried; and while all did some good the large majority of children under twelve years of age had never been in a dental office.

"The problem was, How are these children to be reached? About this time various large cities passed a law requiring every child to pass a physical examination on admission to school. The weak points were noted and the teachers of physical culture did what they could to correct them. A great change for the better was soon perceived. Another law was soon added, *viz.:* a careful examination of the eyes by competent oculists. Many were the defects discovered, and thousands of eyes were saved that would otherwise have been ruined or permanently injured before their school days ended.

"Educators, scientists and professional men soon saw that a grand step had been taken for humanity. Dentists were not long in taking their cue, and by the energetic work of societies a plan was adopted and presented to the solons. Soon the edict went forth that the teeth must also be examined on the pupil's admission to school and at the beginning of every school year, unless they present a certificate from the dentist showing the teeth to be properly cared for. The only thing compulsory was the examination. The dentist examined the teeth, and his assistant made notes on a printed chart calling attention to each one's needs. These charts were given to parents by pupils and returned to teachers with signature of parent or guardian attached. Generally the parents would be astonished, and say, 'Why I had no idea there was anything to do with my child's tooth or I would have had it attended to.' The result you can easily imagine. Children came in such numbers that dentists were overrun. There were not enough to do half the work. Colleges boomed and had to double their capacities. In a short time few children feared the dentist because their teeth were not permitted to reach the painful point. For the first two or three years the examina-

tion took some time, but the dentists gave it gratuitously and were amply repaid for it. Soon the children began bringing in their certificates, signed by their dentist, which exempted them from examination and the work was reduced in proportion. The keynote had been struck; not by preaching to parents and children that the teeth should be attended to, but by opening each one's mouth and pointing out the various defects; for every child who was spoken to about it would declare the teeth were all right, unless they had had toothache at some time, and even then would generally deny it through fear of being hurt worse by the dentist. In 50 per cent of those examined the children were shown and made to understand for the first time in their lives that they needed a dentist's services, and 90 per cent of the parents were as ignorant of the children's needs as they themselves. But when they found out positively that such services were needed, it was surprising how soon the young hopefuls began coming into the dental offices. The mother generally accompanied the child on the first visit, and told the dentist about the chart being sent from school, expressed her surprise that anything was wrong with darling's teeth, and requested him to make an examination in order to verify or refute the official report. It always ended by the dentist receiving a new patient, or the promise of one, and instructions to do all necessary work. Then the battle was won. After getting their teeth put in shape, cleaned, etc., it was but little trouble for the dentist to arouse their interest and pride. It became a fad among the children; they pointed with pride to their clean teeth and little fillings. These little patients became the dentist's best friends, for they kept reminding the laggards, and soon those who deferred the visit and whose teeth showed inattention were driven to the office by public opinion of schoolmates. Often younger brothers and sisters came with the older children and wanted their teeth 'fixed.' They were cared for of course, but in case nothing was needed they frequently showed displeasure at not being permitted to have a tooth filled. 'But, doctor, I must be going and allow you to breakfast.' I thanked him for his kindness and invited him to call again and inform me more as to detail, which he promised to do. As the door closed rather loudly I heard another and well-known voice inquire if I knew it was 7.30 o'clock. I awoke from slumber and to the fact that I really must arise, vulcanize the case myself and resume my practice, not along the beautiful lines I had seen in dreamland but according to the old methods in use in 1895." *Dental Review.*

DENTISTRY IN BRAZIL.

Thos. B. Mercer, D.D.S., Minneapolis.

The climate, an all-important factor to the foreigner, is, of course, distinctly tropical, accompanied by that lavish display of vegetation characteristic of the tropics—becoming in the lowlands a perfect net-work of palms, mosses, grasses, etc., luxuriant beyond description. The summer season, from about December 1st to April, is extremely hot, and as the large cities are all seaport towns (with the exception of Sao Paulo), low and damp, they become veritable incubators for low-fever germs which, to the unacclimated new-comer, are often fatal, but in other seasons it is often pleasant indeed, and, till the novelty wears off, is really quite ideal.

The people, a mixture of the Portuguese, African negro and native Indian, are an olive complexioned, rather slight people—the better class are pleasant to meet and quite cordial, but inclined to be hypercritical. Their government is at present a very unstable affair, which is detrimental to money exchange and cripples the country. For admittance to practice dentistry in your own name, an examination in the Portuguese language before the Medical Board of Rio de Janeiro must be taken, which, by the way, is very severe, but by being in the employ of or using the name of some one licensed, you are not interfered with.

Practically all of the representative dentists are North Americans, who employ from three to five more, but there are some native practitioners who come to "the States" for their course, then return. Prices being high, the work among these representatives is of a very superior quality and conscientiously done. Their offices are fully equipped with all late appliances, but there are native dentists who are about as numerous as barbers, and who, with few exceptions, maintain about the same degree of dignity. Their outfit would include little more than forceps, amalgam, a spatula and arsenic. They use the latter about as freely as we would dental plaster—from an obtundent in a simple cavity to an exposure. The pulp is never removed, so when pulpitis or an abscess develops it is extracted, or they "save up their money" and apply to a "dentista Americana," whose appointment book usually has a dozen or more cases bearing evidence of the skill (?) of these native operators. Outside of the office the life is hardly as agreeable as most of us would wish, as for the first year you are

handicapped by the language, and after you have mastered that after a fashion and feel that you would like to become acquainted and mingle somewhat in the society that is afforded, you are confronted with the fact that, humiliating as it may seem, a dentist holds an inferior position. This also holds good among the British residents. But grant that you gain the dental *entree*, you soon find their ways and what is expected of you so different from what you are accustomed to, that you are pleased to let it alone and return to your dental friends once more, where, with the exception of a dinner or an excursion "up country" now and then, you experience the steady routine of work, eat and sleep. *Dental Register.*

TEACHER AND TAUGHT.

Some men of great learning cannot teach; the faculty of imparting knowledge is distinct from the faculty of acquiring knowledge. To teach is not simply to tell, but to make the statement of the fact so interesting and so clear that it assumes a living importance and is eagerly sought and intelligently retained by the hearer as a part of himself. A teacher must draw bold, clear outlines, omitting details and repeating essentials, till his pupils have a mental framework on which they themselves may erect more elaborate structures at a future time. He who has not the power to select the essentials, and lead the scholar to reason and observe, is destitute of the teaching instinct, his lectures become mere recitations, wearisome to himself and to his involuntary hearers. The true teacher furnishes his pupil with compass and chart; no more. The latter must select his route and reach his harbor by the exercise of those intellectual powers which have been given him. It is experience, and not memory, that has been called the mother of idea. *John B. Roberts, A. M., M. D., in Southern Dental Journal.*

SAVING TEETH.

Dr. H. B. Smellie.

A young lady of about twenty-one years came to me some weeks since for consultation. On examination, I found the following conditions: Left upper lateral incisor extracted, left central pulpless, right central with two very large cavities and pulp nearly exposed, right lateral broken off half way from gum to cutting edge, and the remaining teeth, though slightly irregular, were of good form and structure, with only a few small crown cavities.

Gums fine and healthy, and general health excellent.

She had been told by another dentist that the three remaining incisors could not be saved, and that as it was only a question of time when the others would ache too, she must have them extracted.

Having known me in previous years, and wishing to save her teeth, if possible, she came across the State to me.

I devitalized the right central and lateral, treated and filled the roots of all three, and ground them down to the margin of the gum. To the left central I fitted a collar crown, to which I soldered the left lateral. The right central and lateral were fitted with porcelain-faced collar crowns.

In the remaining teeth were placed six gold and two amalgam fillings, all small, and the teeth thoroughly cleansed and polished.

Result : Teeth preserved, facial contour retained, usefulness restored, appearance improved, and patient gratified.

In the use of articulating paper I obtain the best results by getting the patient to bite rapidly up and down instead of grinding on the paper, and the articulation should be so arranged that the pressure will come on the bicuspids and the first molar. I have known of instances where the wisdom teeth or second molar of the lower jaw stood at an angle of forty-five degrees, and in the articulation of an upper set those teeth should never be permitted to come together end for end, as it will cause crowding of the plates forward. In case the lower teeth are far enough forward to permit it, I recommend the dropping of another tooth behind them from above, to throw the crowding backward instead of forward. I believe articulation to be one of the most important branches of successful prosthetic dentistry, and the most likely, if neglected, to produce an unfavorable impression on the patient by the teeth not coming together properly.

If the plate is found to press on the posterior margin of the mouth, I recommend the grinding of the articulation of the last molars rather than the filing or alteration of the plate.

L. P. Haskell.

The death of Dr. W. H. Gingrich, of Norfolk, Va., is much regreted by a large circle of friends. He was a successful dentist and an esteemed citizen.

OUR QUESTION BOX.

With Replies From The Best Dental Authorities.

[*Address all Questions for this Department to Dr. E. N. Francis, Uvalde, Texas.*]

Question 225. *How can malformed incisors, or incisors effected by mechanical abrasion be restored by crowns or porcelain jackets?*

Please explain how the jackets are made without cutting off the tooth, as for Richmond crown and without destroying pulp.

The art of making and adjusting enamel jackets, so they will be well adapted as a substitute for natural enamel for defective teeth, is an operation that cannot be acquired by book instruction.

To remove from sensitive teeth what remains of the natural enamel; to shift the original position of malformed teeth, including a portion of the dentine, and to use good judgment in the selection of tools, appliances, etc.; then to know just how to handle especially constructed facilities so that the most sensitive teeth may be reduced to one-fourth their normal size, giving but little pain or fatigue to the patient, is knowledge that cannot be properly obtained unless it is made a careful study under a competent teacher.

In the *Independent Practitioner* of August, 1886, will be found an illustrated description of the method of doing this work. It will be seen that over nine years have elapsed since I first called attention to the art, and though the identical cases referred to in that article are still doing excellent service, it is a significant fact that but a very few practioners have mastered the process. However, those who have had the proper conception, skill and perseverance can testify to the great value of the improvements and how well the work can be done when properly manipulated.

See series of articles by W. A. Capon, beginning with the January ITEMS of 1895.

C. H. Land, Detroit, Mich.

Question 226. *Young lady, aged 13 years, has a right upper central incisor missing. The upper teeth protrude, striking the top of lower lip. The other central and lateral on either side of missing central are sound. Is she too young to wear a bridge? If not, which tooth should support the bridge, and should the teeth be regulated before bridging?*

Perhaps if the teeth were regulated it would fill the space or could be made to by dividing the spaces all around. If not, I suggest a plate till the patient is older, then bridge and support by the central.

E. Ernest Murray, Boston.

I think the patient too young for a bridge. Regulate at once, keeping in mind the correction of the space of the lost tooth, by one of the following methods: The upper cuspids being in proper position, bicuspids, molars, and articulation and breadth of arch, etc., correct, I would pull back the three front teeth, which will close the space considerably—the character of lips and teeth modifying the treatment.

Other things permitting, extract the left lateral, shaping the cuspids to resemble laterals as well as possible, and at a later date crown the right lateral with a central crown. *T. W. Onderdonk, New York.*

I should hesitate in bridging for one so young. The abnormal position of teeth should be corrected at once, being sure to keep the proper space between the central and lateral. Then insert partial plate with one tooth. You can use this plate as an appliance to attach or support the corrected teeth, as it will be necessary to hold them in proper position for at least a year. Sometimes they will not stay longer.

After maturity a porcelain tooth can be attached by a heavy skeleton crown to the central.

Be sure the lower front teeth do not interfere with the operation.

Will S. Kelly, Wilkesbarre, Pa.

Question 227. *The patient is a young lady aged 17. Apparently scorbutic. Gums effected from childhood, but gave no serious trouble till a year ago, since which they have followed nearly all the symptoms attending pyorrhea. She informs me her father has been troubled with something similar nearly all his life. The gums are congested, purple, tumified, bleed readily and pus present around the necks of all the teeth. No tartar of any consequence, and upper teeth all firm. Lower front teeth and right first molar loose but in proper position. She has catarrh of the head, is nervous, has rheumatism in one ankle and arm, dyspepsia, cold feet, sometimes swelling of feet, and eyes at times effected. I syringed pockets thoroughly with a two-grain solution of mercuric chlorid in peroxid of hydrogen, following with an injection of carbolic acid, oil of eucalyptol and gaultheria, and requested her to return the next day. Please suggest treatment.*

The patient seems generally debilitated. Should want her general condition better before expecting much improvement in her mouth. Then your treatment would, I think, be very good. *E. Ernest Murray.*

I would correct all systemic disorders, both functional and organic, far as possible, believing from description the trouble is largely caused by disregard of physical and hygienic laws.

Give proper attention to food, exercise, ventilation of sleeping apartment, etc., as well as the cleansing of the mouth, which must be kept in a disinfected condition by the use of listerin or it equivalent.

T. W. Onderdonk.

Systemic treatment:

Syrupi ferri iodidi.....f℥j.

Emulsion olei morrhue (50 per cent).....q. s. ℥viij.

M.—S. One tablespoonful three times a day, one hour after meals.

After using one bottle of above blood tonic, plain lime water in milk, dose, one tablespoonful twice a day, just before meals. Continue the use of lime water for three months, and all of the secretions will be changed.

Local treatment: Syringe all pockets under gums with clear peroxid of hydrogen, and two days after cauterize every morbid part of gums with car-

bolic acid. Then a few injections of peroxid of hydrogen will probably be sufficient, but all foul substance must be scraped from the necks of teeth.

Sometimes pyorrhea can not be successfully treated, and extraction becomes necessary. *Will S. Kelly.*

[Dr. Kelly has forwarded some private remarks regarding this case, which we can forward to the propounder of above question, on appplication. E. N. F.]

Question 228. *What shall I do for my patient when the slightest thing causes nausea? I want to take impression for partial upper plate. The patient is a man aged 45 years, and tells me he has been in this condition all his life, and at times, if he puts his finger in his mouth, it will cause sickness.*

Ask the gentleman to pass his finger down over the palate as far as he can, without gagging, every hour during the day and evening, for a few days, then paint the palate with about an 8 per cent solution cocain, and I think you can take the impression. *E. Ernest Murray.*

Paint the surface of the arch with a 10 per cent solution of cocain. Cut out the center of arch, in the plate, and put two small oblong air chambers on each side of the arch. If he can not tolerate that much plate I would suggest bridge-work. If patient is not willing, or can not afford first-class bridge-work, make a removable bridge with gold clasp and vulcanite foundation. I have made several, and they appear to give good service. The bridge should be removed and teeth thoroughly cleansed every night.

Will S. Kelly.

I instruct such patients, when about to take an impression, that nothing unpleasant is going to happen, that all I want them to do is simply to incline the head forward and breathe through the nose; then I insert the impression material. I insist on their doing so. Some have difficulty in breathing through the nose with mouth open, but with a few minutes practice they can.

Have the cup and all materials very clean. I seldom have occasion for any other treatment. In the event of failure resort to several auxiliaries, such as having the patient use a feather for several days, touching the palate far back as possible, also use a mouth wash of camphor water, or spray the mouth with a two per cent solution of cocain. This, however, I do not advocate except where it is impossible to secure impression by any other procedure. *T. W. Onderdonk.*

Question 229. *Who is using gutta-percha for the purpose of vulcanizing and making permanent artificial dentures? Will you give modus operandi and the success of it? Why has it been discarded and rubber used instead? Do vulcanized gutta-percha plates disintegrate or become brittle with age? How does it act on the mucous membrane?*

[The reason I ask these questions is that I am experimenting with gutta-percha, and am delighted with the result. I have made about twenty-five plates and have never had one returned for repairs. I intend to follow up my experiments, and at the end of this session read a paper on the subject. I wish to get the experience of others.]

At the time the Goodyear patents were taking in their last scalps in the form of heavy license, gutta-percha was quite extensively used, but it was dropped when the Goodyear patents run out and rubber substituted. Any answers regarding it will be greatly appreciated if forwarded to Question Box of ITEMS, Box 81, Uvalde, Texas. I made many plates of gutta-percha to avoid the Goodyear patents and liked it very much; I never heard any complaint. ED. ITEMS.

Question 230. *What degree of temperature should a thermometer indicate to obtain the best results in making nitrous oxid?*

As most gas used comes in cylinders we have been unable to obtain any answers to your question. Our experience is that the heat should be only sufficient to decompose the nitrate of ammonia, not exceeding 204.4° C.

Question 231. *A child, five years old, was brought to my office complaining of one of her central lower incisors hurting her, and on examination it was found another tooth was through the gum on the inside. Is it the permanent tooth, and should it be extracted?*

This may be a supernumerary, but would prefer to extract the temporary tooth. *E. N. F.*

In arranging a set of teeth for an old person whose teeth have been extracted for many years, the processes are usually absorbed so that there is practically nothing left, and the lower jaw projects forward, its radius seeming to be shortened; therefore it is difficult to arrange the teeth, as there is no rule to go by and no basis to start from as to the exact position of the teeth.

In arranging the lower set to the upper set I always begin with the second bicuspid, arranging the fronts but partially, the main thing being to secure articulation of the bicuspid and molar, and then the anterior teeth can be articulated in the best way possible. Sometimes they will be found too wide for the space allotted them, and in that case they can be lapped or crowded in somehow. The main thing is to articulate the bicuspids and molars properly. The chief difficulty in articulating bicuspids and molars is owing to the fact that the articulating surfaces are not made to come together, it being necessary to grind some of them to make them meet. The lingual cusps of the bicuspids and molars should be shorter than the buccal cusps of the lower, and *vice versa*. I frequently find instances where the lingual cusps of the upper bicuspids or molars are longer than the buccal. I follow Dr. Bonwill's method of using the articulating circle by grinding deep, broad grooves in the bicuspids and molars, so as to bring the surfaces together, and I believe that there is no other method that can be followed with satisfaction till it is possible to induce dental depots to furnish artificial teeth more in accordance with nature.

L. P. Haskell.

PRACTICAL POINTS.

By Mrs. J. M. Walker, Bay St. Louis, Mississippi.

Painless Removal of Pulp Entire.—After removal of arsenic, wipe out with a fresh solution of dialyzed iron and place in cavity a small pillet of cotton, saturated with tannin and glycerin (sat. sol.). Seal in with gutta-percha. After ten days you can remove the pulp whole, without pain or hemorrhage.

H. H. Silliman.

To Relieve Toothache.—Wash the cavity with pyrozone, 3 per cent, dry quickly and apply chloroform, followed by melted carbolic acid. *A. W. Harlan.*

Inflammation of Pulp.—To reduce preparatory to arsenical application. Apply peroxid of hydrogen; then, on a whisp of cotton, take up bicarbonate of soda and place in cavity loosely, and saturate the surrounding parts with chloric ether; cover cotton with sandarac varnish. After this treatment the pulp is less liable to give pain from arsenic. * * *

Putrescent Pulp Canals.—Dessicate thoroughly and then saturate with sulfuric ether and iodoform—15 grains iodoform to the ounce of sulfuric ether. Deodorize with oil of cinnamon. Fill at once. *Dr. Register.*

Oxiphosphate Fillings in Proximal Cavities. — Oxiphosphate is the most dangerous and treacherous filling that can be put in a proximal surface. * * * The safeguard against the danger lies in the use of gutta-percha along the cervical borders. This combination makes a very good filling for the proximal surfaces in young soft teeth, or for frail, badly-decayed teeth of any age. *S. G. Perry.*

To Remove Plaster from Vulcanite Plates.—If the flasks have been left in the vulcanizer over night, some difficulty may occur in thoroughly removing all plaster. This is overcome by immersing the plates for five minutes in hydrochloric acid.

W. S. Nowell.

To Line Red Rubber Plates with Black Rubber.—Before packing, coat the cast three or four times with a solution of black rubber, allowing each to harden before applying the next.

Ohio Journal.

Pulp Capping.—Flow mastic varnish over the exposure, and sprinkle on all the oxid of zinc that will adhere; flow oxiphosphate over this. *J. M. Mason.*

Treatment of Chronic Abscesses.—First line the cavity with a solution of gutta-percha, to prevent discoloration of enamel walls. Then force aromatic sulfuric acid into the sac, followed by a solution of bicarbonate of soda to neutralize the acid.

J. W. Davy.

Root Canal Filling.—When gutta-percha points are used, gutta-percha dissolved in eucalyptol is a better lubricant than cloropercha, eucalyptol being less irritating to the tissues in the apical space than chloroform. *C. N. Johnson.*

Formalin in Capping Amputated Pulps.—Apply to wounded surface of pulp carbonized cotton dipped in a 30 per cent solution of formalin. After twenty-four hours the surface of the pulp will be found cauterized, gray and hard, though elastic, when the filling may be inserted. *G. Forsman.*

Removal of Green Stain.—Apply trichloracetic acid, saturated solution. Polish with pumice. *O. A. Weiss.*

Alveolar Abscess.—Inject 20 per cent trichloracetic acid into the sac with a syringe. *Dr. Wright.*

Removal of Living Fibrils of Pulp.—Wrap a few fibers of cotton or raw silk in a hair-like Swiss broach from which the temper has been drawn. Charge with carbolic acid and introduce into canal. Pulp fibrils will be withdrawn cauterized, blackened and disintegrated. Repeat till the cotton is withdrawn white, dry and clean. *S. G. Perry.*

After Pains of Extraction.—Moisten a pad of bibulous paper in the following, and apply to the socket:

℞. Menthol crys..... gr. v.
Tinct. aconit..... gtt. xx.
Chloroform.....q. s. fiat. ℥ij.

J. W. Jangerman.

Palliation Application to Gums after Removal of Deposits.—

℞. Plumbi acetatis..... ℥ss.
Tinct. opii..... ℥ss.
Aqua.....q. s. ℥iv.
For local application only.

W. X. Sudduth.

Combination All-Gold Filling.—Cohesive and non-cohesive foil folded together in the proportion of one-third cohesive to two-thirds non-cohesive, with the cohesive on the outside, used as soft gold, packs more readily, and makes a more solid filling, with stronger and better margins than either form of gold alone.

Benj. Lord.

Painless Pulp Devitalization.—Grind together equal parts of arsenic and crystals of cocain ; add sufficient carbolic acid to form a paste. If there is congestion of the pulp, it must be treated and reduced before the arsenical application is made.

S. C. G. Watkins.

Painless Pulp Devitalization.—Apply equal parts of arsenic and tannin, finely powdered, mixed with a syrup solution of cocain and carbolic acid. Seal in with thin cement over pellet of cotton. Before removal of pulp with bristle, work cocain and carbolic mixture down to end of root canal. Will prevent sensitiveness and hemorrhage. *C. H. Thorn.*

Use of Rubber-dam in Removal of Deposits.—Punch holes in the rubber-dam far apart enough to allow it to lie loosely over the gum septum ; force it down around the tooth cervix. The calculus is thus exposed to view, débris is not thrown into the mouth, and there is no annoying interruption to cleanse the mouth. Ligature the inferior teeth, and give the ends to the patient to hold, keeping the lower lips out of the way.

Henry Barnes.

Combination Filling (a Clinic).—The cavity was filled about one-half full of amalgam. To this was added Steurer's plastic gold till a good gold surface was obtained. The surface was roughened with a plugger point, and the filling finished with Williams' foil, No. 4. *H. S. Sutphen.*

To Clean Impression Trays.—Coat with sweet oil and boil in strong soap water. Dry and polish with whiting, using soft woolen rag or fine leather. Plaster will not adhere after this cleansing. *C. B. Edgers.*

Pulp Devitalization.—Adjust rubber-dam ; cleanse cavity ; dry with warm air ; apply on pellet of cotton oil of cloves or wine of opium ; remove and dry again ; puncture the pulp and wipe away drop of venous blood ; apply to point of exposure amount of arsenious acid that can be taken up with point of fine smooth broach. Saturate a pellet of cotton with carbolic acid or oil of cloves ; place on it ⅛ or ¼ grain morphia ; lay in carefully. Flow thin oxiphosphate over to real margin. Prevent occlusion ; this in case of marked pulpitis. Remove after forty-eight hours in adults. *T. J. Borland.*

To Cleanse Putrescent Pulp Canals.—Force sodium peroxid in canals with broach, moisten with water. Let it fume and boil up a few minutes. Wash out and dry the canal with heat. Fill immediately. Perfect satisfaction. *Dr. Deane.*

Root Canal Filling.—I have but one way of filling a root of a tooth, and I do that with oxichlorid, carrying it to the point of the root with one or two laps of No. 10 gold on a very small broach, wrapped in such a way that when the broach comes away the gold will stay there. *J. N. Crouse.*

Iodin in Pulp Canals.—Pure cassia with iodin dissolved to the extent of 2 grains to the dram by weight, makes a syrupy solution easy of application to pulp canals, and which is a potent germicide and antiseptic. One or two per cent terebene added to the preparation overcomes the tendency to become hard and insoluble. *W. B. Ames.*

Salol in Pulp Capping.—Remove all decay possible, saturate floor of cavity with oil cloves or cinnamon. Fill depressed disk of platinum (32 gage) with parts composed of carb. acid, oxid of zinc and vaselin, invest over exposure. Place crystals of salol over cap, and liquefy by passing warm flat burnisher over it. Will hermetically seal. Cover with cement and fill as desired.
R. M. Sanger.

Treatment of Root Canals.—When the pulp is freshly devitalized, use freely a saturated solution of aristol in oleum gaultheria, and fill as soon as possible after removal of pulp.
Louis Jack.

Treatment of Infected Root Canals.—Apply disinfectant for twenty-four hours after opening, under cotton and wax dressing. Cleanse by syringing full of warm water and absorbing by paper-points, "pulling" out the putrescent contents instead of pushing through as in swabbing. *Dr. Hodson.*

Beeswax as Root Canal Filling.—Cleanse and dry the canal with a hot broach. Insert a point of beeswax in the canal and follow down with hot broach, frying it into the tubuli. Continue forcing it down with little ball of cotton till the canal is filled. Makes a firm, impervious filling, which neither shrinks nor disintegrates, and is tolerated if forced through the foramen.
J. H. Collins.

Fillings in Deciduous Teeth.—When perfect preparation is not possible, apply nitrate of silver to softened dentine left, and fill with oxiphosphate. Decay will not progress to any great extent, and filling can be renewed later, when excavating, with little if any pain. *S. G. Perry.*

ITEMS.

In all bridges and partial artificial dentures, the pressure of the articulation should be thrown on the natural teeth, because if thrown on the crown or bridge it has a tendency to crowd the plate into the gums and cause additional absorption and discomfort. *L. P. Haskell.*

* * *

The very city which mobbed and dragged William Lloyd Garrison through its streets with a rope around his neck, later on voted him a gift of $15,000, and a graceful and inspiring monument to-day stands as a reproach to the injustice accorded this hero during our dark days. *C. E. Bentley.*

* * *

In doing plate work our hands get so soiled with grease and dirt from the flasks that soap won't remove it. To clean them thoroughly use gasolin or benzin which will take it all off like magic, then wash the hands with clear water and sweet toilet soap and you can see your lady patient. *C. C. McCloud.*

* * *

A DOUBLE-POINTED ENGRAVER FOR WAX AND RUBBER.—Take an ordinary chisel and grind a *V*-shaped notch in it, keeping the angle at about thirty degrees, this gives one, two instruments in one, a right and left. Make one and you will readily see its advantages. *John G. Harper, D.D.S., St. Louis, Mo.*

* * *

In making full upper and lower plate, if the articulation is not perfect when put in the mouth, don't grind the teeth at the chair where the patient can see every thing you are doing and know you have made a poor articulation, but let the patient bite together with the cases in place on a ridge of soft wax, remove and place on the articulator, and you can see where the articulation is bad and grind the tooth, away from your patient, they being no wiser. *C. C. McCloud, Shreveport, La.*

* * *

Gutta-percha heated in hot water to about 100 degrees Fahrenheit becomes plastic. and will take a fine impression with slight pressure. When gutta-percha is soaked for an hour in benzole or naphtha it becomes swollen, and if it is then dipped in hot water, it becomes so plastic that it may be used with safety on very fragile and delicate objects. It is specially adapted to electrotyping. *Electrical Review.*

In swaging any metal I always oil my dies to prevent, as far as possible, the baser metals adhering to the plate, and before annealing wipe off all trace of the baser metals. After annealing and partial swageing, wash the plates in sulfuric acid and boil them so as to peel off the base metals. I prefer the use of cotton-seed oil for mixing modeling sand, to that of water, the steam from which caused the formation of air bubbles in the metal cast.

L. P. Haskell.

* * *

ADMINISTERING NITROUS OXID.—Especially in English dental journals do we see directions as to the use of the "gas bag." Gas should always be given from a gasometer arranged so that the volume of gas comes freely and with even pressure. If it is given from the bag, the pressure varies greatly and the effort in breathing from the partially collapsed bag enhances the danger.

Western Journal.

* * *

Where the teeth are all gone on one side, I would, for the purpose of making a perfect clasp, advise the separation of the teeth; and if a considerable space was required, I would, to prevent the induction of decay in the teeth, advise the extraction of one sound tooth, if necessary, to secure a firm hold for the artificial teeth. I believe this to be for the best interest of the patient in the end.

L. P. Haskell.

* * *

During the last hours of Daniel Webster, Mr. Adams called, and seeing his desperate condition and wishing to cheer him a bit, said to the dying statesman: "Good morning, Mr. Webster; I hope you are doing well." Mr. Webster's eloquent though sad reply was: "Mr. Adams, I am sorry to say that I am not. I feel that I am the tenant of a house sadly racked and shaken by the storms of time. The roof leaks, the windows rattle, the doors creak on their hinges, till my mansion seems almost uninhabitable. But the saddest part of the situation, sir, is that I have received word that the landlord positively refuses to make any further repairs."

Annals of Hygiene.

* * *

For sensitive dentin, nitrate of silver we think easily holds superiority. In its use, we formerly applied the remedy at one sitting, making appointment the next day for operating. Expe-

rience proves that a wait of half an hour after applying the caustic is better than the longer time. We have found that the most satisfactory form in which to use it, is a saturated solution ; the prepared pellets of various kinds soon lose their effectiveness.

Western Journal.

* * *

NO TOOTHACHE IN THAT FACTORY.—There is a large manufacturing establishment on the West Side which employs a dentist to examine the teeth of all applicants for work. If a tooth has a cavity, it must be filled, or, if it is too far gone, it must be pulled. The dental work is, in most cases, done at the expense of the factory, and has proved to be wise economy. Little time is lost on account of toothaches. Teeth of employés are examined at regular intervals, whether they are giving their owners any trouble or not. *Chicago Times-Herald.*

* * *

In the course of a plea for succinctness in scientific papers, the editor of the *Pacific Druggist and Physician* shows to what degree condensation may be carried, by reducing to a paragraph of six lines all of value contained in an article of forty-nine. If everything offered for publication, and most of which is published, were thus "succincted," what would become of the "original communication" department of our periodicals—dental periodicals for example. The simple fact is, it is much easier to write long than short, diffusely than concisely ; to bury a thought than vivify it. *Odontographic Journal.*

* * *

The dentist must be physically sound, without health he will be unable to bring the serviceable attributes and the fertile brain so necessary in the successful practice of his profession.

His manners should be good ; his demeanor kind and gentle, indicating the inner worth.

He must be morally sound. This is the keynote to the symphony, the compass of the ship, the main path to the broad highway of success. The moral safety of the patients entrusted to his care must be an assurance beyond peradventure ; like Cæsar's wife he must be above suspicion.

He must collect his bills and pay his debts.

C. E. Bentley.

To make an upper denture satisfactory, where there were no lower posterior teeth remaining in the mouth, I recommend putting some in, as I consider it as absurd to have a complete upper set with no lower posterior teeth as to have a two-wheeled vehicle with only one wheel, especially as the primary object in inserting artificial teeth is for mastication. *L. P. Haskell.*

* * *

WHAT WE NEED.—What the man of to-day needs most is not athletics in a gymnasium, but plenty of fresh air in his lungs. Instead of a quantity of violent exercise that leaves him weak for several hours afterward, he needs to learn to breathe right, stand right and sit right. The young man or young woman who starts on a career of training, and keeps it up year after year, just at the time when the body has a great deal of its own natural work to do and wants to do it, may make up his or her mind that beyond a showy and superficial development of muscle and strength, all this training in after life is going to count against them.

Annals of Hygiene.

* * *

The following is worth republishing: ITEMS states that the easiest and cheapest cement to prepare for uniting broken edges of glass and china is made by taking two ounces of pulverized white gum shellac and half an ounce of gum mastic. Soak them together in a couple of ounces of sulfuric ether, and add half a pint of alcohol. When dissolved, the preparation is ready for use. Heat the edges of the article to be mended, put on the cement with a brush, hold firmly till the cement has set, lay the article away for a week, and it will break anywhere else than in the mended place. *Dental Record.*

* * *

SHE HAD BITTEN HERSELF.—About a quarter of a century ago Beranger's "Grisette" was performed at one of the theatres. The part of Lisette was allotted to Virginie Déjazet. This popular actress, then advanced in years, had lost all her teeth, and, to do justice to her new rôle, she had ordered a fresh set. As the teeth felt uncomfortable, she took them out when the play was over and put them in her pocket. When in the green-room she incautiously sat down, and immediately jumped up, with a scream.

"What is the matter?" inquired our jolly old friend, Adolphe Dennery.

"Nothing," said Mlle Déjazet. "I have only bitten myself."

Review Théatrale.

EDITORIAL.

PLENTY OF ROOM FOR THE INTELLIGENTLY INDUSTRIOUS.

The idea that a young man must be a minister, or a lawyer, or a doctor—become a professional man—to reach eminence! It is nonsense. A man may distinguish himself in almost any sphere, if he keeps in the van; and if he does not, he is a failure in anything, or at best he will be in the midst of a vexatious struggle. The struggle of life comes largely from the want of room. Get to the front and you have a whole world to dance in.

Do you know how to mix brains and muscles with enthusiasm and continuity of purpose? Then the barren waste will yield you wealth, the bowels of the earth will whisper to you of hidden treasures, the very stones under your feet will turn into pearls. But the barren waste will laugh at you till you conquer its wiles; the great heaps of gold will hide from you till you dig with might and main, and the stones will not show their beauty without much polishing.

The trouble with us is, we want to get rich without hard work; we want to be wise without severe study, and we want to reach the eminence without the rugged climbing.

Think of something new. Don't live in the rut others have made all your life. Venture out into new pastures. Think. Think in some new channel. It will do you good though you accomplish little. Though new thoughts may bring nothing directly they will expand your views, rouse your faculties and stimulate your ambition. The very fact you are looking for something will improve your sight, sharpen your wits and accelerate your gait. Come, wake up! There are plenty of profitable things hidden that you may find; there are many things of value lying around loose; there are gems and pearls and diamonds not yet discovered. They may be within reach, waiting to be sought for with dili-

gence. No, no; you misunderstand me. I did not mean you need only to reach out for them. They elude the lazy man; if they are found, they are worthless without skilled labor; many a man is keeping for life in his curiosity box what might fill his house with gold. Are you one of them?

Gather up the crumbs; treasure fragments of time; prize little opportunities. O the precious bits of life we allow to go to waste! They are enough to make any of us now in unrest, poverty and ignorance, happy, wealthy and wise. Why is it we will flitter away what might constitute our diadem of glory?

How we sigh for what is out of reach, when we might be happy with what we have. Why is it we are willing to go to the ends of the earth for the unattainable while we are trampling under foot treasures unappreciated? Why is it we will pour over problems of life too deep for us, when in our very nursery we may find lessons that would control the world?

Let us gather ourselves together and make the most of our time, and strength and opportunities; let us search as with a lighted candle for lost pearls, for hidden treasures, for wasted values that, put in good order and made the most of, will make our lives sparkle with beauty, shine with value and glow with delight.

What thy hand findeth to do, do it with thy might, for it is the enthusiast that succeeds. It is the man who springs at his work with his whole life that accomplishes his purpose. Talent, genius, money, great opportunities, and a host of friends to push you into prominence, will not bring you success, unless you push yourself, and push yourself with all your might—not with a spasmodic effort, but with a constant, intelligent, well-sustained effort, that brings into the work, body, mind and spirit, all your time, and all the forces you can command. Strip yourself from every evil habit, from every weight that doth so easily beset you, and *run*, run with patience the race that is set before you, and you will win. Come,—at it at once. Brook no delay. Be hindered by no obstacle. Spring at your work, and pursue it to completion, though it takes your life long.

WIN THE CHILDREN, FOR THESE ARE TO BE YOUR FUTURE PATRONS.

It seems to be a great distance to look forward to, but it will come. The little boys and girls of to-day will—O, how quickly be young ladies and gentlemen, and will want much dental work done by some one. If your little patients are pleased with you now they will soon come when their work will be more important and profitable. It will then seem but a little time since they tried your patience in their childhood. Win their little hearts and make your attention, so many advertisements of your faithfulness and patience for them to read by-and-by.

EDITING.

Frequently we give offense by condensing articles. Nearly every writer is jealous of his "peculiar style." Many, when they see what would have been an article of "respectable length" cut down to a few sentences, are disappointed, though it may retain every important thought of the original. A voluminous writer recently sent us an article which we believed we improved by cutting down to less than one half its length. We sent it back for his approval, and got as an answer: "Print just as I wrote or not all." Of course it did not print.

The space in the ITEM is too precious to allow a long-winded style. There are magazines who prefer these "exhaustive essays." Many of these long articles are historical landmarks, or so replete with connective facts they can hardly be made shorter. These should not be thrown aside. But the ITEMS is for the masses of the profession who have not time to read very much, and yet who crave all important and practical thoughts. But they want them clothed in the shortest and simplest language.

Most do not take sufficient pains with what they send to the press. They think they have not time to more than jot down what they expect the editor to put in proper shape. This is inexcusable presumption and laziness. Others do their best, but

cannot write well. Editors are willing to help such. There are few articles that do not need some editing, though the writers may be quite intelligent. Not long since a popular and intelligent dentist sent us a statement which he had evidently prepared with much pains. With this he sent a note saying he wanted it to appear just as he had written it. We accommodated him. He was much mortified when one of our readers pointed out to him two grammatical errors in a dozen lines. Even many of those who write books do not look sharp enough to the construction of their sentences, and to a clear statement of their facts.

Take the following as a fair sample of many articles sent to the ITEMS. The gentleman evidently did his best, but have we not in our recast all there is important in the original, and perhaps more plainly expressed, in half the words?

DARK JOINTS IN VULCANITE PLATES—HOW TO PREVENT SAME.

There is a great deal of trouble among those who do vulcanite plate work, to avoid dark joints. I submit, herewith, my method of making vulcanite plates, which, if followed out, I think will prevent dark joints to a considerable degree.

Everything should be scrupulously clean throughout the entire process. To commence with, the grinding of the teeth should be done under a magnifying glass, in order to have a perfect fitting joint. I use two corundum wheels. The first, a coarse wheel, to knock off the extra gum ; the second, a finer wheel, which enables me to make a nice, smoothy joint. For waxing up the

TO AVOID DARK JOINTS.

Every thing should be scrupulously clean. To grind the teeth, I use two corundum wheels, a coarse one to be followed by a fine. For waxing up the plates paraffin and wax is cleaner than wax alone. To clean the joints, remove each block, commencing with the molars, being careful not to damage the wax ; then with a sharp knife shave off the feather edge of the wax impression

plates, I use paraffine and wax, which by experience I find superior to straight bees' wax, as the work can be kept much cleaner. Now, I have my teeth ground up and waxed. The next process is to chill the wax, removing each block, commencing at the molar block. Be careful not to damage the wax. After all of the blocks have been removed, then with a sharp knife shave off the feather edge of the wax, above the place where the pins come, as high as you want the rubber to come after completion of plate. Before replacing the teeth in the wax, put them in boiling water, in order to remove surplus wax ; wash with soap and water so as to get them perfectly clean and trim the plate. Then, mix a little of any of the cements to a thin mixture, and place a small quantity on the joint surface, which will thoroughly seal the joints. Next, finish up the wax as you want the rubber when done. The more pains taken in waxing, the less work in removing plate from vulcanizer. If everything is kept clean up to this point, you will next be ready to flask. You will flask as usual, except after varnishing, instead of using oil, you will find soap-water much better. Use as little oil as possible. The oil, in my opinion, near the pins, as high as you want the rubber to come, after the completion of the plate. Before replacing the teeth, put them in boiling water to remove any surface wax, and then wash with soapy water. Now place a little thin mixed oxiphosphate on the surface of the joints and place the blocks in position. Finish up the wax as you want the rubber when done. The more pains you take in waxing the less work you will have in finishing the rubber. Flask as usual, using soapy water instead of oil. After unflasking, to remove all wax, flood with hot water. In packing use a little more rubber than you did of wax. Place over the rubber a piece of thin wet cloth and press in boiling water. In ten minutes separate and remove the cloth, trim off the excess of rubber, close, and vulcanize.

has a great deal to do with dark joints. Now, you have the plate flasked. Lay it aside for four or five hours in order to give the cement time to harden. Separate flask and flood with hot water, so as to remove all particles of wax that may have been left by heating flask for separation. After this is accomplished, pack your rubber. Use a little more rubber than wax. Place over the rubber a piece of thin, wet cloth. Then put your flask together and place it in boiling water. After remaining ten minutes, put under screw press, with tight pressed. Separate and remove the cloth, trim off the excess of rubber, close and vulcanize.

If the above instructions are followed, I think dark joints will be avoided.

POLICY.

To show policy is not always hypocrisy. Some dentists are so over-scrupulous they have no policy, but they are not always free from hypocrisy. And they are so far from sweetness and affability they may well be called sour, morose and cranky. They are so gruff and curt it is a wonder they have any patrons. A little suavity and smoothness of temper, a few kind words and gentleness of manners, a warm smile and a gentle shake of the hand, all these are stock in trade very valuable, but costing little.

Be polite, gentlemanly, even esthetic, and you and your work will be better appreciated. A little taffy to sweeten a sour temper or to encourage a warring spirit is a pleasant medicine, and not very costly.

Of course we would not encourage nonsense, deception, a blandent softness, or even extravagant expressions. These are sure to disgust and repel. But every patient that comes to us is sure to have some good points, some commendable goodness, something to compliment. Recognize it. A good word judiciously spoken, a kind act frankly performed, even a tender look sympathetically given, will make a friend.

Especially encourage brave endurance, show thankfulness for quiet submission to inevitable pain, and appreciate patience. You should bear with impatience, have consideration for much fretfulness, and excuse many interferences and complaints. Put yourself in their place, and you will overlook many weaknesses and sympathize with many groans.

Do not fail to thank them when they pay you; it is paying for a sorry job, though it may have been a necessary one. Express sorrow that the bill is so large, and still more sorrow that it cost your patron tears. Sometimes you may consciously say part of your work is not as satisfactory to you as you could wish. You will lose nothing by frankness.

LOOK ON THE BRIGHT SIDE.

John, my boy, always look on the bright side of everything, —on the bright side of your work and studies, the bright side of your troubles and difficulties, and the bright side of your employer and friends; yes, and on the bright side of your enemies, if you have any.

A whining, complaining, lazy boy never amounts to much. He never does good work. Good work is afraid of him; it goes to some one else. He is sure to shirk and spoil his job and spoil himself for it, and spoil his position. Who wants a grumbler about? He is worse than a scolding old maid.

And as you leave your boyhood and enter on the duties and responsibilites and privileges of young manhood, look on the bright side of life. Don't complain of hard work or hard problems or hard luck. Kick aside every obstacle, shake yourself

from every incumbrance, throw to the devil every bad habit, and push ahead into the sunshine. Rebuffs, and even floggings, once in awhile, will do you good. Take them like a man and pass on. You can get good even out of a good thrashing if you look on the bright side of it.

My good fellow, know that the young man who can not see beautiful sparks coming out of vigorous kicks; who is not made to glow with refining heat by the discipline of severe training; who cannot see golden opportunities in dire necessities, never amounts to much. Be thankful that some one, some circumstance, some providence, is kind enough to straighten you up betimes, that you may feel the grandeur of having a backbone.

PUBLIC OPINION.

Said a dentist to me recently: "I am indifferent to public sentiment, for I give the public my work, not my principles; and I am not much concerned for its morality, for I am not in the community to reform it but to get its support."

This independence of public opinion is fatal to private success, and this indifference to public morals is selfishness to the public good. The public will not separate our work from our morals; and it takes both our work and our morals to constitute our standing, our influence and our prosperity in the community. With public sentiment in our favor we cannot fail; without it we cannot succeed. If, therefore, our morals and culture and skill are below the demands of public sentiment *we must fail*, or we must rise to its demands; if we are above the demands of public sentiment we must be noble and high spirited enough, brave and public spirited enough, to draw public sentiment to a higher level. You may think this presumptuous, and, perhaps, preposterous. But just as surely as one bad man can draw his fellows downward a good man can draw his fellows upward. Be unassuming, simple-hearted and modest, yet brave, open-hearted and aggressive; and above all be yourself an example of what you would have others become. Then your influence will not be in vain. Remember, he who molds public sentiment for good does more than

the legislator who enacts laws, for he makes good laws possible of execution. He makes a standard of morals higher and better and more powerful than law or law-makers.

There is no animal in the world so helpless at birth as man, and none so susceptible to improvement. We talk of poor children and rich children, of weak children and strong children, and of unpromising children and promising children; but at birth all are equally helpless. None are born rich or strong or promising. They hardly know enough to eat and breath and cry. And if they ever become anything they must develop it from within themselves.

My friend, what have you to say? Some remain almost as helpless as babies all their life. To what stage of development have you attained? Do you still want pap and indulgence, and some one to lean on? Or can you stand alone and support those who are weak? Nine in every ten are dependents. Are you one of these, or the tenth—a stalwart, who can carry a load, do a good day's work, and lead the multitude?

Never mind your environment. If you have ambition and intelligence, and stick to some one pursuit for which you are adapted, development and success and an honorable position await you. Roll up your sleeves and go at it in faith, constancy and contiguity of purpose. You will be sure to develop work, and work will develop you.

Of course, there are too many dentists. And there are too many physicians, and merchants, and mechanics, and farmers, and lazy men in the world. It is just fun to have it so. It gives such a fine chance for the industrious, intelligent and enthusiastic to distinguish themselves. What fun is it to run a race with no one to compete with? And if all competitors were equally ambitious, who would have the prizes? Ah, I say it's just fun to be able to push through the crowd and get to the front, where you can have every thing your own way. It is just fun to see the dollars laying around loose begging to be picked up; honors pressing on you, and the best families, who are always at the front, bowing to you, and craving your services at your own price.

THE VALUE OF WORK.

"Satan finds some mischief still
For idle hands to do."

This is the reason many rich men's sons go to the devil. The children of the poor, who have to work hard, have no time to fool away, and therefore cannot make fools of themselves. The rule of the Vanderbilts, obliging every child to learn some trade—even the girls to be proficient in some profitable handiwork—that shall be a support in necessity, and that shall skill the fingers and cultivate and mature the mind and body, is what has kept their progeny in the succession. All, as they come to the responsibilities of life, march forth as independent characters, so that they are able to use the money and manage the vast affairs they come in possession of.

It is a nice thing to have money, but it is much better to earn it than to inherit it. The very earning prepares us the better to enjoy and use it.

And many of us children of a larger growth need to learn this lesson. To give money to a lazy, shiftless, aimless man, is to pour water through a seive. Even many men of industry, by having money they have not earned, are made lazy. Wealth of industry, culture and character is much better than wealth of money. The latter without the former is as often a curse as a blessing. At any rate, let the first and foremost effort of life be to get the former, and that will be sure to bring enough of the latter to bring usefulness, contentment and happiness.

It is the little foxes that spoil the vine, the little sins that weaken the character, the little foibles that ravish our business. So it sometimes comes to pass that inferior men, by keeping out these little foxes, have a good vineyard, while ours is poor; weaker men than we, who avoid foolish habits, in which we indulge, are preferred before us, and blundering men have a better business than we have because they stand up straight to their business, while we bend to personal vices.

HINTS.

The way of the world is to make laws, but to follow customs.

* * *

We may fill our lives with music if we know what chords to touch.

* * *

If an old man only knew as much as a young man thinks he does, how this old globe would whirl.

* * *

A great man is one who can hold his tongue; a strong man one who can hold his temper, and a successful man one who can hold himself steadily to the accomplishment of some wise purpose.

* * *

We sometimes forget that great things are made up of little things well done; great lives of easy lessons well learned, and great achievements of every-day valor in common duties.

* * *

Learning to be wise is not necessarily learning great things, or even new things, but learning anew through bitter lessons and hard experience what we have always known.

* * *

CANDLE POWER.—This, so often used nowadays as the unit of light, is the amount produced by a sperm candle, one-sixth of a pound in weight, burning 120 grains an hour.

* * *

The Saxon days of the week were Saturn's day, presided over by Saturn; Sun's day, by the Sun; Moon's day, by the Moon; Tiu's day, by Mars; Woden's day, by Mercury; Thor's day, by Jupiter, and Friya's day, by Venus.

* * *

A bee is not a busier animal than a blockhead. The more ignorant, stupid and shallow he is, the more assumptive, persistent and irrepressible. In party, sect or profession he is sure to be fractious, envious and noisy, till he becomes a distasteful, intolerant nuisance.

* * *

Why destroy present happiness by a distant misery, which may never come at all, or you may never live to see it, for every substantial grief has twenty shadows, and most of them shadows of your own making.

Mr. Spurgeon said, "I never had any faith in luck except I believe that good luck will carry a man over a ditch if he jumps well, and will put a bit of bacon in his pot if he looks after his garden and keeps a pig."

* * *

THREE RIDDLES WITH ONE ANSWER.—The Germans ask: "What can go in the face of the sun and yet leave no shadow?" The African asks: "What flies forever and never rests?" The Persian asks: "What is wingless and legless, yet flies fast and is never imprisoned?" The answer is, "The wind."

* * *

ROUGH, BUT RIGHT.—The best and bravest men of earth are those who can and will confess a wrong, when their eyes are opened and they see their error. He is a coward who says "the mule was sixteen feet high," and then sticks to his mistake. He is an ass—a stubbornly wicked ass.

* * *

The mean man sows that only he or his friends may reap, even to the disparagement of all the world. The good man sows for all men. The more who reap rich harvests of his sowing the more delighted he becomes. With him, all men are his brothers, all needs are his burden, and all pleasure his triumph.

* * *

Punctuation is comparatively a modern invention, and yet there has been little progress for three hundred years. Of the four generally used points, only the period dates earlier than the fifteenth century. The colon is said to have been first introduced about 1485; the comma about 1510; the semi-colon about 1570.

* * *

TEST FOR INSANE PERSONS.—Buston Ward, the celebrated English physician, says: There is one infallible symptom indicating whether a person is sane or not. Let a person speak ever so rationally and act ever so sedately, if his or her thumbs remain inactive there is no doubt of his or her insanity. Lunatics seldom make use of their thumbs when writing, drawing, or saluting.

* * *

Dr. Wm. E. Harper is about to issue a work on the "Treatment and Preparation of Tooth Cavities." Though this is primarily intended for the use of the students of the American College of Dental Surgery, of which college he is a professor, we are confident it will be a valuable work for all dental students, and many dentists who are not students. Dr. Harper is a ripe scholar, a terse writer, a skilful operator and successful teacher.

FOR OUR PATIENTS.

WHEN I AM OLD.

Professor George Huntington.

Is there a realm called Age within the realm of Time?
And by what sign, in summer bloom or winter rime,
May its fixed boundaries be told?
How may I know the landmark set beside the way?
What warder standeth, when I cross the line, to say,
"Now art thou old?"

I note the passing shadows of the flying years,
The flashing and the fading of revolving spheres,
The chimes in starry belfries tolled;
But in my heart I feel no withering, no decay.
Hope is undimmed and joy unquenched. Then who may say
That I am old?

Yet, far behind, the backward-stretching path I trace;
And close before, the hills whose sunset glow I face,
Where evening spreads her couch of gold.
How long soe'er old age its coming may delay,
I know, barring death only, sometime I must say,
"Now am I old."

'Tis well. After summer flush, the autumn glow;
After the autumn, winter's pure transfiguring snow,
Albeit his friendly touch be cold.
After youth's restless, breathless quests, a peaceful day,
To bow the white head o'er the staff, and grateful say,
"Now am I old."

Then, as I turn to scan the fields I've sown,
May no thorn-harvest there, of wrongs or follies grown
To curses dire, my eyes behold;
But gardens, gladdening him who follows in the way,
And the well-ripened sheaf, that men may bless my day,
Though I am old.

And thou, my heart, let not time's frosts thy pulses chill,
Keep thou thy youth; thy warm affections warmer still,
Thy ripeness riper in the cold.
Frown not, mine eyes; we must go smiling on our way.
Tongue, speak thy best good cheer, that none in scorn may say,
"Ah, he is old!"

And if, at eventime, life's hours of labor spent,
Age, useless, helpless age, decrepit, senile, bent,
My powers would shrivel, Heaven withhold
The melancholy blight, the moldering, slow decay,
And call me in my strength, while yet 'tis joy to say
That I am old.

Into no valley's shadow go the weary feet,
But up the radiant heights, where light serenely sweet
Shines clear and visions fair unfold.
There is the bound of Age, the landmark by the way.
There stands the warder, as I cross the line, to say,
"Here none is old."

The Interior.

MR. GLADSTONE ON LONGEVITY.

England's "grand old man" has given the world his views as to the best manner of obtaining longevity. He is now in his eighty-seventh year, though, as he says, he passed through as much hard mental labor and as much excitement, turmoil and bodily fatigue as most men. His prescription for longevity is a simple one. He is an early riser, not from choice, but because he has a long day's work before him. He has seven good hours of sleep, rises at six, shaves and bathes, and is ready for breakfast at seven, after having spent half an hour in his garden, or, if the weather is unpropitious, he devotes the half hour to reading or writing. In this connection Mr. Gladstone throws out an important suggestion: "The saving and utilizing of every scrap of time is as important a point to the scholar, writer, politician or man of affairs as is the saving and utilizing of every scrap of food by the economical housewife." He eats a light breakfast. Between breakfast and luncheon he attends to his correspondence, and after lunch takes a walk or drive. He dines at 8 o'clock and retires at 10.30.

It is not given to every man to follow Mr. Gladstone's prescription for longevity. Personal environments and business duties might conflict, but it is possible for every man to imitate him by living as regularly, as simply and as near nature as possible, and taking as much exercise as is compatible with the day's duties. Regularity of habits, of sleep, of diet and of exercise are more or less possible to every one, and this seems to have been the secret of Gladstone's as well as of Bismarck's longevity. If this regularity can preserve men of this stamp, whose lives are filled with turmoil and excitement, into the eighties, there is no reason why it should not preserve others who lead less excited lives into the nineties, and even beyond the century mark, barring the dangers of accident or disease. The prescription of Mr. Gladstone is worth serious consideration. Living closer to nature will undoubtedly enhance the prospects of longevity.

United States Health Reports.

A wet silk handkerchief, tied without folding over the face, is a complete security against suffocation from smoke. It permits free breathing, and at the same time excludes the smoke from the lungs.

Alum water will restore almost all faded colors. Brush the faded article thoroughly to free it from dust, cover it with a lather of castile soap, rinse with clear water, and then alum water, and the color will usually be brighter than before.

As a rule, bad breath arises from a disordered stomach; and in such cases, when once the bowels have been regulated by a course of mild aperients, the trouble will vanish. It may, however be caused by decaying teeth, or by neglect of the teeth altogether.

Dew is a great respecter of colors. To prove this take pieces of glass or boards and paint them red, yellow, green and black. Expose them at night and you will find that the yellow will be covered with moisture, that the green will be damp, but that the red and the black will be left perfectly dry.

For ingrowing toe nail cut the end square and close, and scrape with a sharp knife or piece of glass a line in the center of the top of the nail so thin that only the inner lining of the nail is left. If this is kept up, the edges will raise instead of growing down.

In one second of time—in one beat of the pendulum of a clock—light travels 200,000 miles. Were a cannon ball shot toward the sun, and were it to maintain full speed, it would be twenty years in reaching it—and yet light travels through this space in seven or eight minutes.

HANDY WAY OF MAKING GLUE.—Break best glue into small pieces, just cover with strong vinegar, or dilute acetic acid, let it soak a few hours, and heat till it boils. In cold weather it will become a jelly when cold; in summer it will remain fluid. For use, warm till fluid enough; there is no need to boil it.

He who marries for love, gets a wife; who marries for position, gets a lady; who marries for fortune, gets a mistress. If you are sick, your wife will nurse you, your lady will visit you, and your mistress will inquire about your health. If you die, your wife will weep for you, your lady will lament, and your mistress wear mourning.

A locomotive working under a pressure of 140 to 165 pounds to the square inch may move a railway train at a velocity of 60 miles per hour, which we are apt to think of as a wonderful speed. But it is slow compared with the rate of motion of the projectile from a modern great gun. Such projectile flies at the rate of 1,365 miles per hour, impelled by a pressure of 35,000 to 40,000 pounds per square inch.

The method prescribed for cleaning brass in United States arsenals is said to be to make a mixture of 1 part common nitric acid, and ½ part sulfuric acid, in a stone jar, having also ready a pail of fresh water and a box of sawdust. The articles to be treated are dipped into the acid, then thrown into the water, and finally rubbed with sawdust. This immediately changes them into a brilliant color. If the brass has become greasy, it is first dipped into a strong solution of potash and soda in warm water; this cuts the grease, so that the acid has full power to act.

A RUBBER CEMENT.—It is a great convenience to have a rubber article repaired without the trouble of sending it from the house. Five cents' worth of red rubber cut in bits and covered with chloroform, will make a cement to mend many rents. Apply it with a brush, working rapidly. If there is a large opening use a piece of "rubber-dam," fastening it with a few stitches, and apply the cement. Label the bottle and keep it out of the reach of children, as the chloroform is, of course, dangerous to tamper with.

A young doctor, wishing to make a good impression on a German farmer, mentioned the fact that he had received a double education, as it were. He had studied homeopathy, and was also a graduate of a "regular" medical school. "Oh, dot was nodding," said the farmer, "I had vonce a calf vot sucked two cows, and he made nothing but a common schteer after all."

HE WOULDN'T PROMISE.—Miss Oldgirl—You must promise not to kiss me while I am unconscious.

Dentist—I shall do nothing of the kind.

Miss Oldgirl (with a happy sigh)—Turn on the gas.

Leslie's Weekly.

"I've made my will," said an Irishman who belonged to a quarrelsome family, "but if they fight over it after I'm dead, sure I'll write a codicil that'll make 'em dance!"

"What is a cigar? I want you to tell me,"
Lisped little Tom Brown to his knowing big brother;
"It's a roll," was the answer, "of silly enchantment,
With a fire at one end, and a fool at the other."

INSOMNIA.—The utility of heat as a remedy for sleeplessness can scarcely be overestimated—particularly in the form of hot water. Insomnia is frequently overcome by the persistent use of hot foot baths, and simple hot water as a drink at bedtime. Sleeplessness is commonly caused by overfullness of the blood-vessels of the head; the bathing of the feet draws the blood from the head, the hot drink distributes the gases of the stomach, and gives one a sense of general comfort.

Water serves to convey any pressure or power which may be given to it, whether that pressure is a pumping engine at the end of a main, or by means of a column or weight of water above the main, contained in a lofty tower or high storage reservoir. One cubic foot of water weighs 62½ pounds, and if the height of the column is increased, the pressure on the base is increased for every foot of water thus added a further 62½ pounds. A column of water one square inch in area at base, and 2.3 feet high, weighs exactly one pound, so that for every increase of height of 2.3 feet, a pressure of one pound per square inch is added to the base.

At the annual meeting of the Washington City Dental Society, the following officers were elected for the ensuing year: President, W. M. Hunt; Vice-President, D. E. Wilber; Secretary, W. N. Cogan; Treasurer, M. F. Finley; Librarian, H. B. Noble; Essayist, G. L. Hills.

The annual election of officers of the Odontographic Society, of Chicago, held December 9th, 1895, resulted as follows: President, Dr. C. E. Murhoff; Vice-President, Dr. E. R. Carpenter; Secretary, Dr. H. H. Wilson; Treasurer, Dr. Edmund Noyes; Board of Directors, Dr. R. B. Tuller, Dr. C. E. Bentley, Dr. J. G. Reid; Board of Censors, Dr. A. B. Allen, Dr. H. A. Drake, Dr. G. W. Schwartz.

The next annual meeting of the Vermont State Dental Examining Board will be held at the Welden House, St. Albans, Vt., Tuesday, March 17th, at 2 P. M.